



# Procedural Guidelines

## National Electronic Toll Collection Network (NETC Network)



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Document History

<u>Version</u>	<u>Release Date</u>	<u>Author</u>	<u>Reviewed By</u>	<u>Approved By</u>	<u>Revision History</u>
1.0	29 <sup>th</sup> Feb 2016	Product Development	Product Development	HOD Product Development	First Version
1.1	1 <sup>st</sup> March 2016	Product Development	Product Development	HOD Product Development	Internal Revision
1.2	7 <sup>th</sup> March 2016	Product Development	Product Development	HOD Product Development	Internal Revision
1.3	6 <sup>th</sup> April 2016	Product Development	Product Development	HOD Product Development	Internal Revision
1.4	31 <sup>st</sup> May 2016	Product Development	Product Development	HOD Product Development	Internal Revision
1.5	15 <sup>th</sup> September 2016	Product Development	Product Development	HOD Product Development	Internal Revision
1.6	15 <sup>th</sup> December 2016	Product Development	Product Development	HOD Product Development	Internal Revision
1.7	06 <sup>th</sup> January 2018	Product Development	Product Development	HOD Product Development	Internal Revision
1.8	31 <sup>st</sup> March 2022	Product Development	Product Development	HOD Product Development	Internal Revision

1.9	10 <sup>th</sup> March 2023	Product Development	Product Development	HOD Product Development	Internal Revision
2.0	29 <sup>th</sup> February 2024	Product Development	Product Development	HOD Product Development	Internal Revision
2.1	29 <sup>th</sup> February 2025	Product Development	Product Development	HOD Product Development	Internal Revision

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Revision History:

Version 1.2

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.2	3.1.1	Integration with Plaza System	One Plaza will be acquired by a single bank at any point of time	07-03-2016
1.2	3.2.1	NETC FASTag Distribution	Banks may ensure to have adequate risk management and NETC FASTag inventory management for the NETC FASTags	07-03-2016
1.2	4.4	ETC Payment System Architecture	The sentence WIM will be used by acquiring bank to calculate the toll fare of overweight vehicles is eliminated (PointIII)	07-03-2016
1.2	4.4	Failure Scenarios	Point ii i.e. connection lost between Lane controller and Plaza server is eliminated	07-03-2016
1.2	5.5	Transaction Life Cycle	The description and TAT of Debit Adjustment has been modified	07-03-2016
1.2	6.1	Dispute Management by NPCI	Scenario for unsettled dispute is explained	07-03-2016
1.2	7.1	Risk Management at Issuer	Issuer to ensure only one NETC FASTag is affixed against the registered vehicle class	07-03-2016
1.2	9.1	Compliance of Issuer	The sub point b is eliminated	07-03-2016
1.2	9.1	Compliance of Issuer	The vehicle image should be captured at the time of NETC FASTag registration and stored by issuer for dispute purposes. (Point d)	07-03-2016
1.2	9.2	Compliance for Acquirer	One Plaza will be acquired by a single bank at any point of time (Point i)	07-03-2016

1.2	9.3	Compliance for Plaza Operator	Plaza operators should send Zero transaction file every 15 minutes (point p)	07-03-2016
1.2	9.3	Compliance for Plaza Operator	IHMCL/ NHAI should ensure round the clock connectivity at the Plaza	07-03-2016
1.2	9.3	Compliance for Plaza Operator	IHMCL/ NHAI to share user/ vehicle image from cash lanes as an overall high level MIS on monthly or quarterly basis.	07-03-2016
1.2	10.1	RFID NETC FASTag Bureau Certification	For the existing NETC FASTAG, ARAI certification standard will be consider as a preliminary criteria	07-03-2016
1.2	Annexure V	NON-DISCLOSURE AGREEMENT	In article 12: TERM, the period of agreement is modified	07-03-2016
1.2	Annexure VI	Guidelines for Dispute Management System in ETC System	The table of Disputes in ETC system is modified	07-03-2016

#### Version 1.3

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.3	3.1	Acquirer	Acquirer have to send all the transactions which are executed at the lane controller to NETC system i.e. successful, fail, decline etc.	06-04-2016

1.3	3.1.3	Pass Management for Acquirer	Pass management is required at the acquirer end as the user can approach Plaza to purchase a pass by an alternate payment mode like cash, credit card, debit card, etc.	06-04-2016
1.3	3.2	Issuer's roles and responsibilities	Process of pass issuance by Issuer will be implemented in second phase	06-04-2016
1.3	3.2.1.1	NETC FASTag Manufacturing and personalization	Issuers will have to ensure robust inventory management for NETC FASTags	06-04-2016
1.3	3.2.1.1	NETC FASTag Manufacturing and personalization	Once the NETC FASTags are personalized with EPC and issuer signatures, the NETC FASTags are live	06-04-2016
1.3	3.3	Plaza Operator	TPO must send all the transactions carried out by the lane controller to ETC system i.e. successful, failure, decline etc.	06-04-2016
1.3	3.3	Plaza Operator	TPO will have to accept new as well as existing NETC FASTags issued by Issuer for the period of 90 days from the date of project gone live	06-04-2016
1.3	4.4	ETC Payment System Architecture	WIM calculation will not be considered in the current phase of the project but may be applicable in future phases as per the instructions from IHMCL/NHAI	06-04-2016
1.3	4.4	ETC Payment System Transaction process	NETC system will validate the NETC FASTag status in the exception list at the time of transaction initiation and if the TID is present in blacklist/ low value	06-04-2016

			exception list, the system will decline the transaction	
1.3	4.4	ETC Payment System Transaction process - Failure Scenarios	If the transaction is beyond 15 minutes, the TPO can send the transaction to the ETC system within 8 hours and the liability of the transaction lies with TPO in case there is insufficient balance in the user account. In such transactions the issuer can raise chargeback, and Acquirer will not have any re-presentment rights	06-04-2016
1.3	4.4	ETC Payment System Transaction process - Failure Scenarios	If the transaction is beyond 8 hours, the TPO (through Acquirer) does not have the rights to present the transaction. ETC system will decline all such transactions	06-04-2016
1.3	4.4	ETC Payment System Transaction process - Failure Scenarios	In case the connection is resorted the TPO/ Acquirer should ensure to process the transaction online to ETC system within 15 minutes from transaction initiation time	06-04-2016
1.3	4.4	ETC Payment System Transaction process - Failure Scenarios	ETC system will validate the NETC FASTag's digital signature and will switch the transaction to the respective issuer. In all such scenarios the acquirer needs to calculate the toll fare basis AVC vehicle class as the ETC mapper vehicle class does not exist	06-04-2016
1.3	5.5	Transaction Life Cycle	The pre-requisite of Debit Adjustment is settled transaction, and the TAT is within 3 days for settled transaction	06-04-2016
1.3	6.1	Dispute Management by NPCI	In case of any unsettled disputes, NPCI will give the final verdict, but the user has rights to raise the dispute in consumer court and bank ombudsman	06-04-2016

1.3	7.1	Risk Management at Issuer	Ensure only one NETC FASTag is affixed against the registered vehicle class	06-04-2016
1.3	9.1	Compliance of Issuer	At the time of registration, the issuer will ensure there is only one NETC FASTag on a vehicle and will capture vehicle image. Issuers should keep the images for the period of at least one year. It is recommended to create an archive for storing images for dispute purposes	06-04-2016
1.3	9.1	Compliance of Issuer	The Issuer should ensure KYC for underline payment instrument link to NETC FASTag	06-04-2016
1.3	9.1	Compliance of Issuer	The Issuer should mention/communicate all the charges applicable to NETC FASTag holder for the ETC service	06-04-2016
1.3	9.2	Compliance of Acquirer	One Plaza should be acquired by a single bank at any point of time. Although the choice of selecting the bank will be with the TPO	06-04-2016
1.3	9.3	Compliance for Plaza Operator	The TPO should provide a minimum of one dedicated lane and one hybrid lane for NETC	06-04-2016
1.3	9.3	Compliance for Plaza Operator	The TPO should send zero transaction messages every 15 minutes, in case there is no transactions on the ETC lane	06-04-2016



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1.3	9.3.1	Audit	The TPO may conduct their internal audit	06-04-2016
1.3	10.1	RFID NETC FASTag Bureau Certification	For the existing NETC FASTag, ARAI certification standard will be considered as a preliminary criterion and NPCI will further certify the vendors	06-04-2016
1.3	Annexure V	NDA - Article 12: TERM	This agreement would remain valid from the date last written below until the termination or expiry of this agreement. The obligations of each party hereunder will continue and be binding irrespective of whether the termination/ expiry of this agreement for a period of five years after the termination/ expiry of this agreement	06-04-2016

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.4	3.1	Acquirer	Acquirer must maintain the image files by Plaza operator for a period of one year	31-05-2016
1.4	3.1.1	Integration with Plaza system	Plaza server will process the transaction and send it in the specified (IHMCL) format to the Acquirer host	31-05-2016
1.4	3.1.2	Integration with NETC System	Toll fare calculation will be based on vehicle class received from NETC Mapper	31-05-2016
1.4	3.1.3	Toll fare Calculation	Plaza server/ Lane controller will check NETC FASTag ID format and its occurrence in exception list	31-05-2016
1.4	3.1.4	Exception List handling	Acquirer should periodically fetch the latest exception list from NETC system and send the same to Plaza server every 10 minutes which will be updated to lane controllers within 10 minutes of its receipt by Plaza server	31-05-2016
1.4	3.2	Issuer's Roles and Responsibilities	Issuers must validate the digital signature of the NETC FASTag. In case the signature validation fails the NETC FASTag needs to be added in blacklist	31-05-2016

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.4	3.2.1.1	NETC FASTag Distribution - NETC FASTag Manufacturing and personalization	The issuer will have to ensure the robust inventory management for live NETC FASTags. The NETC FASTags are said to be, once the NETC FASTags are personalized with EPC ID, toll table vehicle class, dummy vehicle registration number, and digital signatures.	31-05-2016
1.4	3.3	Plaza operator	Plaza operator should provide at least one NETC lane in each direction	31-05-2016
1.4	3.4	Marketing and Branding	NETC FASTag structure should also contain NETC FASTag ID encoded in the barcode or QR Code	31-05-2016
1.4	4.4	NETC Payment system structure	Transducer ID is TID and EPC ID is NETC FASTag ID	31-05-2016
1.4	4.4	NETC Payment system structure	Mapper will respond to the acquirer request with valid NETC FASTag details like vehicle class information, vehicle registration number, TID, etc.	31-05-2016
1.4	4.4	NETC Payment system structure	Issuer is liable for the transactions up to 20 minutes of adding the NETC FASTag IDs in the NETC exception list	31-05-2016

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.4	4.4	NETC Payment system structure	The acquiring host and Plaza server should ensure that the transaction messages should reach NETC switch within 15 minutes of transaction initiation (i.e. the time at which vehicle passed NETC lane)	31-05-2016
1.4	4.4	NETC Payment system structure	If transaction is received after 15 minutes and within 3 days, NETC switch will process the transaction	31-05-2016
1.4	4.4	NETC Payment system structure	If the transaction is received after 3 days of transaction initiation NETC switch will decline the transaction	31-05-2016
1.4	4.4	NETC Payment system structure	For all transactions received by Acquirer host, toll fare will be calculated based on the NETC mapper's vehicle class and Plaza operator will receive toll fare for that vehicle as per vehicle class defined on NETC mapper	31-05-2016
1.4	4.4	Failure scenarios	After 20 minutes of adding the NETC FASTag IDs in exception list NETC switch will decline the transaction, and the liability of transaction lies with Acquirer/ Plaza operator	31-05-2016

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.4	4.4	Failure scenarios	In case of proved fraudulent transactions due to cloned NETC FASTags, NHAI/ IHMCL will review and compensate the issuer on case-to-case basis	31-05-2016
1.4	7.1	Risk Management at Plaza	Plaza provide Exception list validations/verifications only.	31-05-2016
1.4	7.2	NETC FASTag Authentication Method	<p>1) Figure - NETC FASTag Static Data Authentication at Lane Controller/ Plaza Server: This process would be applicable once the changes are made by the lane controller to authenticate the NETC FASTags.</p> <p>2) Figure -NETC FASTag Signing Process: Hexa-decimal string of NETC FASTag's TID and NETC FASTag ID [EPC ID] is concatenated to generate the NETC FASTag Static Data. This static data is hashed with SHA-256 cryptographic hash and signed using Issuer Private Key. The process is illustrated in the above figure</p> <p>3) Figure - NETC FASTag Static Data Authentication for Issuer: The Issuer host shall also validate the NETC FASTag signature with the NETC FASTag's TID, NETC FASTag ID [EPC ID] and User memory data received in the transaction message. Issuer Host Shall Blacklist any NETC</p>	31-05-2016

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
			<p>FASTag with an invalid signature.</p> <p>4) The current CCH Specification defined IHMCL/NHAI doesn't contain fields for TID and entire user memory block in the message definition. The Attribute_7 and Attribute_9 fields in CCH transaction message definition should be used by Plaza operator to pass TID and 512 bits of user memory from Plaza server to Acquirer Host.</p>	
1.4	7.4.2	NETC FASTag Production	<p>1) Signing of static data: The issuer signs NETC FASTag ID and TID using an issuer private key to produce the Signed Static NETC FASTag Data.</p> <p>2) NETC FASTag Signed data preparation: The NETC FASTag manufacturer writes dummy vehicle registration number, vehicle class and the signature values onto the NETC FASTag's User memory as per the defined format.</p>	31-05-2016

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.4	9.1	Compliance of Issuer	The Issuer should honor all the NETC transactions which are received from NETC System within Fifteen minutes for online transaction processing and 3 days with limited liability	31-05-2016
1.4	9.2	Compliance for Acquirer	Fifteen minutes for online transaction processing and 3 days with limited liability	31-05-2016
1.4	9.3	Compliance for Plaza Operator	<p>1) Plaza Operator should ensure to transmit securely all the transaction processed records to the acquirer within specified TAT as per the SLA mentioned in the Deed of Adherence (DOA).</p> <p>2) The Plaza operator should provide a minimum of one dedicated lane in each direction and one hybrid lane for NETC.</p> <p>3) Fifteen minutes for online transaction processing and 3 days with limited liability.</p> <p>4) If it is found that valid NETC FASTag is not read at the NETC lane and Issuer provides evidence of precedence/subsequent transaction then the Plaza has to pay the penalty per instance as decided by IHMCL/NHAI.</p>	31-05-2016
1.4	10.2	RFID Reader certification	The reader certification will be applicable in the future phases of the NETC project	31-05-2016

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<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.4	Annexure VIII	Guidelines for DMS in NETC System	Chargeback can be raised for not registered NETC FASTag	31-05-2016
1.4	Annexure VIII	Guidelines for DMS in NETC System	Re-presentment can be raised on the proof of non-acceptance of chargeback	31-05-2016



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Version 1.5

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.5	3 4	Acquirer  Issuer	The Acquirer and Issuer split into separate chapters to differentiate between the payment transaction, clearing & settlement and NETC FASTag issuance.	15-09-2016
1.5	2.2	NETC steering committee	A separate NETC Steering Committee will be created as per the existing guidelines of NPCI.	15-09-2016
1.5	5.0	Operating procedure of Issuer & Acquirer	Operating procedures of acquirer and issuer is moved to section 3 and section 4 respectively	15-09-2016
1.5	10.0	Compliance of Issuer and acquirer	The compliance of acquirer and issuer is moved to section 3 and section 4 respectively	15-09-2016

Version 1.6

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.6	NA	NA	Segregated the PG document into two parts: Part - I: Payment Clearing and Settlement and Part - II: RFID and Vehicle Identification	15-12-2016
1.6	PART I 6.5	Clearing and Settlement	Credit chargeback and credit chargeback acceptance has been added in dispute life cycle	15-12-2016
1.6	PART I 6.5	Clearing and Settlement	The prerequisite of chargeback has been modified	15-12-2016

1.6	PART I 4.5	Issuer	Process for linking RFID NETC FASTag with payment instrument	15-12-2016
1.6	PART I 5.2	Operating procedures	Data retention and storage	15-12-2016
1.6	PART I 5.9	Process of blacklisting NETC FASTags	Process of adding/removing NETC FASTags in blacklist	15-12-2016
1.6	PART I 4.2.2	Setting up user service channel [Helpdesk]	Roles and responsibilities of helpdesk	15-12-2016
1.6	PART I 11.3	Members Certification	NETC online and NRCS offline certification details	15-12-2016
1.6	PART II 1.0	RFID and vehicle identification	Introduction of RFID NETC FASTag has been added	15-12-2016
1.6	PART II 2.0	NETC Lane	The NETC lane section has been added	15-12-2016
1.6	PART II 3.0	NETC FASTag - IHMCL GS1 Code	NETC FASTag description has been added	15-12-2016
1.6	PART II 4.0	Transaction processing at Plaza	Transaction processing is explained in this section	15-12-2016
1.6	PART II 5.0	Fraud Management at Plaza	Process for compensating Members from the IHMCL/NHAI compensation fund	15-12-2016
1.6	PART II 6.0	User Support at Plaza	User complaint and transaction processing has been added	15-12-2016
1.6	PART II 7.0	Compliance for Plaza Operator	Compliance for Plaza operator has been added	15-12-2016
1.6	PART II 8.0	Plaza On boarding and Off boarding by Acquirer	On boarding and off boarding process for Plaza by Acquirer is explained	15-12-2016
1.6	PART II 9.0	Dispute Management process after roll-over	Dispute Management process after roll-over has been added	15-12-2016

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.7	PART I 3.1.3	Process Flow	Definition of authentic NETC FASTag has been updated as per IHMCL GS1 code/ ICICI GS1 code.	06-01-2018
1.7	PART I 3.1.4	Exception List Handling	The point of exception status in a response message has been deleted in exception list handling process.	06-01-2018
1.7	PART I 3.2	NETC Transaction - Payment and Settlement (in Point 2)	NETC Transaction process has explained the scenario where AVC is not available in transaction message.	06-01-2018
1.7	PART I 3.2	NETC Transaction - Payment and Settlement Failure Scenarios (Point f)	The debit confirmation message, i.e. debit advice processing is explained in case of connection lost between NETC switch & Issuer host.	06-01-2018
1.7	PART I 3.3	Compliance for Acquirer (Point d)	Acquiring compliance point added i.e. Acquirer must adhere to the CCH specifications for processing and acquiring of the toll transaction.	06-01-2018
1.7	PART I 4.1	Roles and Responsibilities of Issuer (Bullet point 4 and 12)	Various channels to be enabled by Issuer for top up of NETC FASTag are added.  Also, it explains corrective actions to be taken by Issuer on acceptance of debit adjustment.	06-01-2018
1.7	PART I 4.2.1	Failure Scenarios (Point 3)	It is advice to destroy the NETC FASTags in case the NETC FASTag does not meet the specifications mentioned in NETC FASTag Marks &	06-01-2018

			Specification document issued by NPCI.	
1.7	PART I 4.2.1.1	Set up Touch Points for NETC FASTag Issuance	The fixation of NETC FASTags by Issuer has been explained in case of online NETC FASTag issuance requested by a vehicle owner.	06-01-2018
1.7	PART I 4.2.1.2	Maintaining Exception List (Point 4 and 5)	The section covers updation of NETC FASTags in invalid carriage & hotlist as a new exception list.	06-01-2018
1.7	PART I 4.7	Compliance of Issuer (Point b, sub-point (ii))	It explains actions to be taken by Issuer on acceptance or rejection of debit adjustment.	06-01-2018
1.7	PART I 4.8	Handling of damaged and/or disabled NETC FASTag linked account	This section explains the handling of damaged NETC FASTag or disabled NETC FASTag linked account.	06-01-2018
1.7	PART I 5.1	NETC system availability	The NETC services provided by NPCI are defined.	06-01-2018
1.7	PART I 6.4	Clearing and Settlement Cycle	The NETC settlement cycle is changed from four cycles to two cycles in a day.	06-01-2018
1.7	PART I 6.4	Clearing and Settlement Cycle Flow (Point 4)	The clearing & settlement of disputes raised by Members will be settled in first cycle.	06-01-2018
1.7	PART I 6.5	Clearing and Settlement Cycle	In this section, pre-compliance is added in type of dispute messages.	06-01-2018
1.7	PART I 6.5	Clearing and Settlement Cycle	The dispute table includes the updated description & TAT.	06-01-2018

1.7	PART I 10	Compliance	Members need to comply with procedural guidelines issued by NPCI from time to time is defined.	06-01-2018
1.7	PART I 11.3.3	Certification pre-requisites	Compliance with Interface Control Document [ICD] applicable from time to time is added.	06-01-2018
1.7	Part II 3.0	NETC FASTag - IHMCL GS1 Code	The EPC memory NETC FASTag encoding specification diagram is updated.	06-01-2018
1.7	Part II 4.0	Transaction Processing at Plaza	RTO registration certificate to be provided by user to Issuer.	06-01-2018
1.7	Annexure II	Application for Membership of NETC	Format is updated.	06-01-2018
1.7	Annexure III	NETC Transaction Flows:  Section 1: Registration Flow	Elaborated registration flow of NETC FASTag issuance added in this section.	06-01-2018
1.7	Annexure III	NETC Transaction Flows:  Section 2: Exception List Handling	The process for addition & removal of NETC FASTags in exception list on NETC mapper has been updated in this section.	06-01-2018
1.7	Annexure V	Non- Disclosure Agreement	Format is updated.	06-01-2018
1.7	Annexure VI	KYC/ AML undertaking by Members	Format is updated.	06-01-2018
1.7	Annexure VII	Guidelines for Dispute Management System in NETC System	Pre compliance & Compliance added in the topic Disputes in NETC System.	06-01-2018
1.7	Annexure VIII	SLA for Members & NPCI	SLA for Members & NPCI is incorporated	03-12-2019

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.8	PART I 1.1	Short title of the Service and commencement	Modified overview of NETC	16-03-2022
1.8	PART I 1.2	Objectives of NETC	Updated objective of NETC	16-03-2022
1.8	PART I 1.3	Definitions	Updated definition of merchants and System Integrator	16-03-2022
1.8	PART I 2.0	Roles and Responsibilities of NPCI	Updated Roles and Responsibilities of NPCI	16-03-2022
1.8	PART I 2.1	Member notification	Modified Member notification section	16-03-2022
1.8	PART I 2.2	NETC steering committee	Elaborated Composition, Functions, Nomination & terms of office, Frequency of meeting & Quorum, Decision making, Functions of Members and functions of chair under Steering committee section	16-03-2022
1.8	PART I 2.3	Settlement Guarantee Mechanism	Included Settlement guarantee mechanism	16-03-2022
1.8	PART I 2.5	Audit	Updated the audit point for plaza on-boarding	16-03-2022
1.8	PART I 3.1	Roles and Responsibilities	Updated roles and responsibility of Acquirer	16-03-2022

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.8	PART I 3.1.3	Fare Calculation	Updated Fare calculation process flow & Pass management transaction flow	16-03-2022
1.8	PART I 3.2	NETC Transaction - Payment and Settlement	Updated failure scenarios of online NETC transaction	16-03-2022
1.8	PART I 3.3	Compliance for Acquirer	Updated Compliance of Acquirer section	16-03-2022
1.8	PART I 4.1	Roles and Responsibilities	Updated roles and responsibility of Issuer	16-03-2022
1.8	PART I 4.2.1	NETC FASTag Manufacturing and Personalization	Added roles and responsibilities of NETC FASTag Manufactures	16-03-2022
1.8	PART I 4.2.1.2	Maintaining Exception List	In this section added blacklist rules, Low balance list, Exempted vehicle list, Invalid carriage, Hotlist and Closed /Replaced rules	16-03-2022
1.8	PART I 4.7	Compliance of Issuer	Added compliance point on issuer to provide multiple modes to top up NETC FASTag wallet.	16-03-2022
1.8	PART I 4.8	Handling of damaged and/ or disabled NETC FASTag linked account	Elaborated the cases for Issuers on handling of damaged NETC FASTags	16-03-2022
1.8	PART I 4.9	Reasons to add/ register NETC FASTags in exempted or Invalid Carriage vehicle class exception	Updated Note section	16-03-2022
1.8	PART I	Reasons to remove NETC FASTags from exempted or	Reasons to remove NETC FASTags from exempted or	16-03-2022

<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
	4.9.1	invalid carriage exception type	invalid carriage exception type has been modified	
1.8	PART I 4.9.2	Exemption from Payment of fee on NH Plazas	In this section, added points related issuance of all exempted NETC FASTag and updated flowchart for Register vehicle with NETC FASTag in exempted or invalid carriage	16-03-2022
1.8	PART I 5.1	NETC system availability	Modified NETC system availability section	16-03-2022
1.8	PART I 5.2	Operating procedure	Updated operating procedure	16-03-2022
1.8	PART I 5.3	Types of transactions covered and process flow	Modified online transaction processing section	16-03-2022
1.8	PART I 5.4	Business continuity Process	Added BCP process section	16-03-2022
1.8	PART I 5.5	AML/KYC Compliance	Modified AML KYC compliance section	16-03-2022
1.8	PART I 5.8	Marketing & Branding	Modified Marketing & Branding section	16-03-2022
1.8	PART I 5.9.1	Reasons for adding NETC FASTags in blacklist	Updated Reasons for adding NETC FASTags in blacklist	16-03-2022
1.8	PART I 5.9.2	Reasons for removing the NETC FASTags from blacklist	Modified flow chart of adding NETC FASTag in blacklist and removing NETC FASTag in blacklist	16-03-2022



<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
1.8	PART I 5.10	Monthly Pass Portal	Elaborated Monthly Pass Portal section	16-03-2022
1.8	PART I 6.0	ETC Global Clearing & Settlement System (NRCS)	Modified NRCS section	16-03-2022
1.8	PART I 6.4	Clearing and Settlement Cycle	Modified Clearing and Settlement Cycle	16-03-2022
1.8	PART I 6.5	Transaction Lifecycle	Modified NPCI NRCS systems message types	16-03-2022
1.8	PART I 6.7	Net Settlement Activity	Modified Net Settlement Activity section	16-03-2022
1.8	PART I 7.4	Disputes Processing	Updated dispute process section	16-03-2022
1.8	Part I 8.1	Risk management at Issuer, Acquirer levels and Toll Plaza Operator	Added Risk Management- NPCI EFRM Tool and Risk Management at Sub-member	16-03-2022
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<u>Version No.</u>	<u>Paragraph No.</u>	<u>Paragraph Title</u>	<u>Change Made</u>	<u>Date</u>
	12.3		clearance post risk/compliance/AML assessment by relevant teams of NPCI.	
1.8	Part II 7.0	Roles and responsibilities of Plaza Operator	Roles and responsibilities of Plaza Operator have been modified	16-03-2022
1.8	Part II 8.1	Audit	Audit Process has been modified	16-03-2022
1.8	Annexure 1	Definitions and Abbreviation	Removed definition of Settlement Agency	16-03-2022

#### Version 1.9

<u>Version No</u>	<u>Part</u>	<u>Title</u>	<u>Change Added</u>	<u>Date</u>
1.9	PART III	Non-Tolling Use Cases	NETC Parking	10-03-2023

#### Version 2.0

<u>Version No</u>	<u>Part</u>	<u>Title</u>	<u>Change Added</u>	<u>Date</u>
2.0	PART I 2.3.1	Settlement guarantee Mechanism	Updated Principle of Settlement Guarantee Fund	29-02-2024
2.0	PART I 2.3.4	Loss Sharing Mechanism	Updated the loss sharing mechanism	29-02-2024
2.0	PART I 2.2	NETC Steering Committee	Updated the NETC Steering Committee	29-02-2024
2.0	PART I 4.1	Roles and Responsibilities	Updated roles and responsibility of Issuer	29-02-2024
2.0	PART I 4.2	NETC FASTag Issuance	Updated NETC FASTag Issuance	29-02-2024
2.0	PART I 4.2.1	NETC FASTag Manufacturing and Personalization	Updated roles and responsibilities of NETC FASTag Manufactures	29-02-2024
2.0	PART 5.7	Cessation/ Termination/ Suspension of Service	Updated Cessation/ Termination/ Suspension of Service	29-02-2024
2.0	Part 8.0	Roles and Responsibilities	Updated roles and responsibility of Plaza Operators	29-02-2024
2.0	Part III 2.0	NETC EV Charging	Added NETC EV Charging	29-02-2024

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Version 2.1

Version No	Part	Title	Change Added	Date
2.1	PART I 3.1	Roles and Responsibilities	Updated roles and responsibility of Acquirer	5-03-2025
2.1	PART I 4.1	Roles and Responsibilities	Updated roles and responsibility of Issuer	5-03-2025
2.1	Part I 4.1.1	Customer Onboarding and Re-KVY Process	Added Customer Onboarding and Re-KVY Process by Issuer	5-03-2025
2.1	PART I 4.2	NETC FASTag Issuance	Updated NETC FASTag Issuance	5-03-2025
2.1	PART I 4.2.1	NETC FASTag Issuance	Updated NETC FASTag Issuance Exception List	5-03-2025
2.1	PART I 7.4	Dispute Processing	Updated Dispute Processing	5-03-2025
2.1	Part I 8.6	Cyber Incident reporting clause for vendors	Added cyber incident reporting clause for vendor	5-03-2025
2.1	Part III 1.9.1	Roles and Responsibilities	Updated roles and responsibility of Acquirer for Parking	5-03-2025
2.1	Part III 1.9.3	Integration with NETC System	Updated Process for integration with NETC System	5-03-2025
2.1	Part III 2.9.1	Roles and Responsibilities	Updated roles and responsibility of Acquirer for EV	5-03-2025
2.1	Part III 2.9.4	NETC EV Charging Payment System Transaction Process	Updated NETC EV Charging Payment System Transaction Process	5-03-2025

Author: - Rishit Kapadia; Reviewed by:- Kailash Wadhwa ; Approved by: - Vivek Garg

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Topics covered include:

Part I - This section covers Payment, Clearing and Settlement

- Section 1: An Overview of Electronic Toll Collection (NETC) - This section covers an overview of NETC and its objectives. Further, it talks about Definitions related to NETC Network, NETC Payment Model.
- Section 2: Roles & Responsibilities of NPCI- This section covers the roles & responsibilities of NPCI for smooth functioning of Electronic Toll Collection. The section describes NETC service offerings, Settlement Guarantee Fund, Pricing and audit by NPCI.
- Section 3: Roles and Responsibilities of Acquirer- This section covers roles and responsibilities of Acquirer & Plaza operator in the NETC network, Marketing and Branding.
- Section 4: Roles and Responsibilities of Issuer- This section covers roles and responsibilities of Issuer in the NETC network, Marketing and Branding.
- Section 5: Operating procedure for Members- This section covers the operating procedure, transaction processing, NETC Payment System Architecture, NETC FASTag holder registration & complaint, Indemnification, AML/KYC Compliance, Intellectual property rights, Non-Disclosure Agreement (NDA) for the Members of NETC Network.
- Section 6: ETC Global Clearing & Settlement (NRCS)- This section covers complete clearing & settlement process which includes NETC FASTag Validation, Online Transaction processing, Clearing and settlement, Transaction life cycle, report and reconciliations.
- Section 7: Dispute Resolution- This Section covers dispute management procedural guidelines, and the disputes Resolution Mechanism define by NPCI.
- Section 8: Security and Risk Management- This section covers Security and Risk Management on risk mitigation approach for Members and expands on NETC Security Guidelines, Security for NETC FASTag Issuance, NETC FASTag reader authentication, Fraud Detection and Key storage.
- Section 9: Administrative policies and procedures- This Section covers administrative policies and procedures pertaining to fines, pending dues, invoicing process and penalties.
- Section 10: Compliance - This Section covers compliance for Acquirers, Issuers and Plaza Operators.

- 
- Section 11: Certification - This section covers certification procedure of Members in NETC Network i.e. NETC FASTag bureau and NETC FASTag reader, Members certification (NETC online system and NRCS offline system).
  - Section 12: Member On Boarding - This section covers Member on boarding procedural guidelines.

## Part II - This section covers RFID and vehicle identification

- Section- 1.0: Introduction - This section covers three main components of RFID based NETC system i.e. Front End, Middleware and Back End
- Section- 2.0: NETC Lane - This section covers description of NETC Lane which is a lane supporting electronic processing of toll payments allowing collection of tolls while vehicle is in motion.
- Section- 3.0: NETC FASTag- IHMCL GS1 Code - This section describes NETC FASTag which is the brand name for the passive RFID NETC FASTags used in the NETC program.
- Section- 4.0: Transaction processing at Plaza- This section covers about the program that aims to establish a non-stop toll regime in which a vehicle with a single passive RFID NETC FASTag can pass through Plazas on Indian highways and pay toll without stopping.
- Section- 5.0: Fraud Management at Plaza- This section covers different methods to identify, analyze and handle risks involved at Plaza.
- Section- 6.0: User support at Plaza- This section covers prerequisite, NETC FASTag holder complaint & transaction processing at Plaza and related flow chart.
- Section- 7.0: Compliance for Plaza Operator- This Section covers compliance for Plaza Operators.
- Section- 8.0: Plaza On boarding and Off boarding by Acquirer- This section describes the prerequisite and process of Acquirer and reacquiring of Plaza.
- Section- 9.0: Dispute Management process after roll-over- This section covers dispute management after roll-over with different examples.
- Annexures -This section covers Annexures of definition and abbreviations, application forms, NETC Transaction Flow, Letter of Authority, NON-DISCLOSURE AGREEMENT, KYC/AML Undertaking by Members, Guidelines for Dispute Management System in NETC System and NETC FASTag & Reader Parameters, NETC SLA for Members & NPCI.

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Section 1: Overview of Electronic Toll Collection

---

**Section Covers:**

- **Short title of the service and commencement**
- **Objectives of ETC**
- **Definitions**
- **NETC Payment System Model**

---

## 1.0 Overview of Electronic Toll Collection

---

### 1.1 Short title of the Service and commencement

Government of India has undertaken an initiative to create an automated and interoperable electronic tolling structure across the country's highway network.

Indian Highway Management Company Ltd. (IHMCL) is engaged in implementing Electronic Toll Collection (ETC) and other allied works of National Highways of India (NHAI) and as part of this endeavor. NHAI/IHMCL has authorized NPCI for providing a composite, interoperable and secure solution on ETC which would take care of the clearing and settlement of electronic toll transactions.

The National Electronic Toll Collection – Procedural Guidelines (NETC-PG), have been framed for the guidance of participants and binding on all stake holders of NETC Payment system.

### 1.2 Objectives of NETC

The main objective is to evolve the current NETC ecosystem into four party scalable models (i.e. Issuer, Acquirer, NPCI and Plaza Operator) from the existing single party model. It provides an opportunity to evolve a simple and robust framework which is secure, reliable, interoperable and capable of use across the country.

The NETC payment system is based on open standards of RFID technology conforming to ISO 18000 6C and EPC Class 1 Gen 2 standards.

The following are some of the key features of the National Electronic Toll Collection (NETC) paymentsystem.

- To empower the users to use NETC FASTag to pay the toll fare by linking the NETC FASTag to any valid type of bank account such as Saving/Current/prepaid account/Credit/Debit Cards.
- To facilitate electronic collection of tolls, while the vehicle is in motion, which will reduce congestion around Plaza. To facilitate inter-operability across Members that issues NETC FASTags to users and that acquire Plaza in a safe and secure manner for toll transactions.
- To serve the sub goal of Government of India
  - Digitalization of retail payments
  - Reduce air pollution by reducing the congestion around Plaza
  - Reduce fuel consumption

- Reduce cash handling and enhance audit control by centralizing user accounts
- To enhance MIS reporting by data collection, such as vehicle count of the day, date, time etc. which can be easily obtained using electronic toll collection payment system.

### 1.3 Definitions

The acronyms/abbreviations used in this document and their meanings are listed in [ANNEXURE – I](#).

### 1.4 NETC Payment System Model

The NETC Payment System (as outlined in Figure 1) consists of the following stakeholders:

- NETC FASTag Holder
- Issuer
- NPCI
- Acquiring
- Merchants such as Toll Operators, Parking Operators, Fuel Stations, etc.
- System Integrators (SIs)
- IHMCL/NHAI



Figure 1 - NETC Payment System Model



---

## **NETC FASTAG Holder**

The user enrolls for an NETC FASTag with the issuing bank by providing bank account numbers (Saving, Current and Prepaid Account etc.) to be linked to NETC FASTag for the deduction of toll fare.

### **Issuer**

The Issuer is Member of NPCI and issues the NETC FASTag to vehicle owner for the payment through NETC System.

### **NPCI**

NPCI will facilitate NETC Transactions among all Members participating in 'NPCI network'. Further NPCI acts as a centralized clearing and settlement body to settle the transactions and fee amount among the Members.

### **Acquirer**

The Acquirer is Member of NPCI who acquires the Plaza to facilitate the acceptance of NETC transaction for the payment through NETC Payment System Merchants - Toll Operator

The Toll Operator provides infrastructure like NETC RFID Reader, Boom Barrier, Fare display, Automatic Vehicle Classification (AVC), Weight in Motion (WIM), Cameras and Plaza Server for the acceptance of NETC FASTag for the payment through NETC Payment System.

### **Merchants - Fuel Stations**

The Fuel Station Operator provides infrastructure like NETC RFID Reader, Cameras an interactive user interface and Server for the acceptance of NETC FASTag for the payment through NETC Payment System.

### **System Integrators**

System integrator provides the technology solution to the above merchants that enables them to interact with the NETC platform. In the case of merchants other than Plazas, the system integrators shall be responsible for fare calculation and logic, rules for fee applicability etc. i.e. for Plazas, Toll fare is calculated by Acquirers but for Parking & fuel the fare calculation will be the responsibility of system integrators.

### **IHMCL/NHAI**

Indian Highway Management Company Ltd and National Highway Authority of India would be responsible for providing business and toll collection rules. They will also lay down the rules and regulations for the management of concessioners and will also monitor the scheme for National Electronic Toll Collection Network. IHMCL/NHAI will have access to daily/weekly/monthly MIS reports and mapper data.

---

## Section 2: Roles and Responsibilities of NPCI

---

### Section Covers:

- **Role & Responsibilities of NPCI**
- **Member notification**
- **NETC steering committee**
- **Settlement guaranteed Funds**
- **Pricing**
- **Audit by NPCI**

---

## 2.0 Roles and Responsibilities of NPCI

---

NPCI owns the NETC system which comprises of NETC Switch, NETC Mapper and NETC Real-time Clearing & Settlement system (NRCS) as illustrated in below figure 2. NPCI may undertake the operation and maintenance of the NETC network on its own or it may use the services of a third-party service providers for this purpose. NETC initiated transactions would be routed to Member(s) through NPCI's NETC System.

NETC Real-time Clearing and Settlement system (NRCS) is the central clearing house for NETC transactions. NPCI acts as the clearing body for carrying out clearing and settlement functions between the Members.

NETC Mapper is a repository of NETC FASTag IDs maintained by NPCI and NETC Switch is used for the purpose of switching NETC transactions to the Members.

The role of the NPCI includes the following:

- To specify the procedural guidelines for the scheme management and to ensure compliance with them.
- To certify Members, NETC FASTag personalization bureau and vendors.
- To perform transaction switching between acquirers and Issuer.
- To perform clearing and settlement for transactions on this network.
- To provide a central repository for registering the NETC FASTags called NETC Mapper.
- To provide consolidated MIS reports to Members and IHMCL/NHAI.

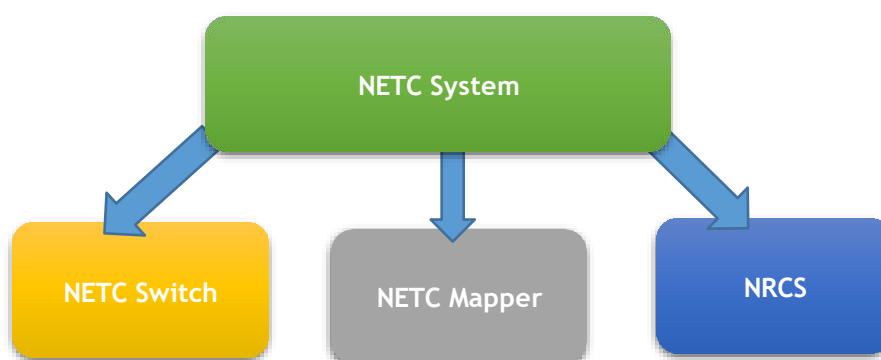


Figure 2 - NETC System

### 2.1 Member notification

NPCI would notify all the Members regarding:

- Amendments in the NETC - PG: NPCI may issue amendments to the NETC-PG from time to time. The revised versions of NETC-PG may also be issued, incorporating new provisions periodically.

- New Amendments/ software upgradation/ hardware released pertaining to NETC System.
- Change in scheduled periodic maintenance hours.
- All notifications issued shall be considered as part of procedural guidelines.
- Any other issues deemed important.

## 2.2 NETC Steering Committee

Steering Committee is an advisory committee, which consists of representatives of member banks, non-banks players, RBI authorized payment system providers and special invites (technology or business counterparties, industry bodies and subject matter experts). The Committee would provide guidance on key issues such as strategic objectives including business and operational objectives and functioning mechanism of a business vertical such as product development, fees and interchange, member bank guidelines of NPCI, etc.

The NETC Steering Committee will discuss and deliberate on business, operational and technical issues relating to the product / services. The Committee's role includes approving or rejecting proposals and deciding on important issues & matters related to NETC members and other relevant stakeholders in the ecosystem.

### Constitution:

The constitution of the Steering Committee shall be in the following manner:

Clause	Reference	Terms and Conditions
1	Members	Not more than 20 members (Generally there should be representatives from all categories).  Promoter Banks should not be more than 50% of the total members. Non-Promoter Banks/ Non-Banks should be 50% or more of the total members.
2	Special Invites	Can be invited on a case-to-case basis.
3	Participants from NPCI	1. CEO/COO and relevant CXOs and Head of sponsoring business vertical. 2. The COO shall chair the steering Committee meeting. In the absence, the designated Chief or Head by COO shall chair the meeting.
4	Eligibility criteria for Membership	As decided by the bank, senior official preferred
5	Authority for Approval /Change/Re-appointment of Steering Committee (after constitution)	Chief Operating Officer, NPCI
6	Non-Bank participants as special invitee	1. NHA/IHMCL will be permanent special invites of NETC SCM. 2. Other non-bank participants relevant to the specific product/service can be invited on case to case basis.

---

**Tenure:**

The Steering Committee member list will be reviewed every 2 years.

**Frequency of Meetings:**

The frequency of meetings shall be at least two meetings per annum.

The Steering Committee meeting may also be called for any exceptional situations or on a specific agenda based on the urgency / requirement of the requirement.

**Quorum:**

It will be necessary for a quorum to be present to decide on proposals, issues and matters discussed in the meeting. For the Steering Committee, a quorum is defined at least 75% of the total number of Steering Committee member banks/institution. While resolving issues and making decisions, the aim of the Committee shall be to achieve unanimity of opinions, wherever possible.

**Attendance at meetings:**

Members may attend meetings of the Steering Committee in person or through Video or Audio call. In an exceptional situation or for a specific agenda based on the urgency of the requirement, the discussion and decision may take place through circulation (emails or any other electronic mode) with Steering Committee members.

**Roles and Responsibilities:** The steering committee reviews the functioning of the NETC and discusses the issues related to:

- New business initiatives and product development,
- Operations and Technology,
- Network security and Risk related matters,
- Any other matter deemed important such as regulatory compliance or industry requirements, Interchange, etc.

The role of the Committee also includes approving or rejecting proposals and deciding on important issues & matters related to NETC.

**Minutes of meeting:**

The minutes of meeting (MoM) of the Steering Committee meetings will be document by NPCI and kept on record.

**Dissolution:**

The COO of NPCI reserves the right to dissolve the Steering Committee at any time on grounds that is deemed fit.

**Termination of Membership:**

The COO of NPCI reserves the right to terminate the membership of any member of the Steering Committee or a Special Invitee nominated by an entity to a Steering Committee at any time on grounds that is deemed fit.

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The terminated member bank can be replaced by another member as may be decided by the sponsoring business vertical Head with approval of COO.

In addition, any representative from any member or a Special Invitee nominated by an entity to a Steering Committee stands terminated with immediate effect in the case the participant bank terminates any existing agreement with NPCI, which pertain to any business or activity performed by NPCI.

**Withdrawal of Membership:**

Steering committee members can also choose to withdraw voluntarily from the steering committee by notifying NPCI in writing.

**Record Retention:**

NPCI shall keep documentation for the Steering Committee in relation to the date and manner of constitution, approved terms of reference of the forums, approved minutes of the meetings, etc. for a period of ten years from the date of the meeting.

**2.3 Settlement Guarantee Mechanism:**

**2.3.1 Principle of Settlement Guarantee Fund (SGF)**

These provisions are based on Principles for Financial Market Infrastructure (PFMI) of Bank for International Settlements (BIS). As per NPCI's risk management framework, NPCI maintains SGF for an amount that is arrived at using the following principles:

The system should have sufficient funds for settlement if the highest net debit position (HNDP) participating bank is not able to fulfil its obligation during settlement

To guarantee the settlement, the system should have sufficient funds for meeting at least 2 settlement cycle obligations on the day of settlement. (2 Settlement cycles per member)

Creation of SGF should also consider forecasting for the next 9 months to address any operational challenges of getting required approvals and sanctions from banks providing Line of Credits (LoCs).

Hence, Required SGF = HNDP1 + HNDP2 for a specified time period (past 6 months) × 3 × Forecasting Factor

Where HNDP = Maximum net debit amount by any Member.

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### 2.3.2 Constitution of SGF

The Settlement Guarantee Fund will have the following components:

1. Member Contribution towards collateral:

- i) Contribution of 10% of the total required SGF will be collected from Members in the ratio of their transaction throughput of past 3 months towards collateral contribution. Currently, the collateral contribution is collected in cash. The Member contribution from the participating bank can be recovered through RTGS/NEFT/DD/Cheque to NPCI provided account details.
- ii) Minimum contribution of INR 5 Lakhs per Product as part of joining fee to be collected from Members and same will be accounted as part of cash collateral.
- iii) Members may contribute part of the collateral by way of G-Sec (Max up to 50 % of collateral requirement) as per the criteria laid down by NPCI.
- iv) For the remaining 90% of the SGF, NPCI will establish a LoC arrangement with multiple banks.

The funds collected by way of (i) hereof, will be invested as per NPCI's investment policies. The income generated would be used towards servicing costs of LoC facility.

### 2.3.3 Determining the Transaction Throughput based Member Contribution

The contribution based on the transaction throughput will be based on the following approach:

- The net debit position or net credit position of each bank will be determined at the end of the month by aggregating all the settlement value for respective products. Member contribution will amount to 10% of the required SGF.
- Net Issuers shall contribute towards 2/3 of the Member contribution amount. Bank's net debit position for the month as percentage of total net debit position for the month would be determined to give the contribution percentage of each debit bank.
- Net Acquirers shall contribute towards 1/3rd of the Member contribution amount. Bank's net credit position for the month as percentage of total net credit position for the month would be determined to give the contribution percentage of each credit bank

### 2.3.4 Loss Sharing Mechanism (LSM)

The provision for LSM is based on Principles of PFMI of Bank for International Settlements. Once the settlement is done by making use of the settlement guarantee arrangement, the defaulting bank must pay the shortfall funded by NPCI plus any charges/penalties that may be levied on the defaulting bank. NPCI will also take all measures to collect this amount, including interest at a rate to be decided by NPCI, to re-induct the defaulting Member into the network after internal deliberation.

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If the defaulting member bank is unable to make good funds pending on account of moratorium or shortfall in settlement account during scheduled interbank settlement, the net obligation towards the particular defaulted Member shall be borne by the survivor participant banks. In such an instance, NPCI will invoke LSM within 5 days after settlement default and surviving Members shall contribute in LSM within 2 from the date of receipt of communication from NPCI.

## **2.4 Pricing**

The pricing schedule for Members will be regulated by NPCI based on guidelines from NHAI/IHMCL and circulated from time to time.

## **2.5 Audit**

IHMCL/NHAI are the program managers for FASTag Payment System and conduct audits of Plazas on-board by them.



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### Section 3: Acquirer

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#### **Section covers:**

- **Roles & Responsibilities**
- **Compliance for Acquirer**
- **NETC Transaction - Payment and Settlement**

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## 3.0 Acquirer

### 3.1 Roles and Responsibilities

Acquirers shall integrate their systems with Plaza operators for the purpose of acquiring transactions processed on the NETC lanes. Acquirer shall also integrate their system with NPCI's NETC system [NETC Switch and NETC Mapper] to facilitate the toll fare calculation.

The acquirer's role and responsibilities can be classified into following activities: -

- To integrate with Plaza System and NETC System.
- Acquirer shall ensure Tag signature validation at all their acquired plazas.
- Acquirer shall ensure the IIN list is updated within 7 days for all acquired plazas.
- Acquirer must follow the Interface Control Document (ICD) specification for transaction processing between plaza & acquiring banks.
- Contracting with plaza operators and deploying the Acquirer host includes the installation and management of NPCI and/or Issuer public keys, adequately protected for integrity.
- Acquirer should have feasibility to support primary and secondary systems to ensure connectivity with multiple endpoints.
- To process payment transactions and to pay the plaza operators for the processed transactions.
- To transmit the completed transaction records to NETC system to obtain the settlement within defined TAT.
- To send all the transactions which are executed at the lane controller to NETC system i.e. Success, Fail, Decline, etc.
- Acquirer shall ensure that no transactions on unregistered tag shall be allowed.
- To keep the image files provided by the plaza operators [i.e. AVC profile, Vehicle Image, etc.] for a period of one year.
- To manage the business rules relating to fare calculation and share the exception list, Local exemption list (discount file list) with plazas.
- Exempted Tags shall be applicable exclusively on National Highways. For other use cases such as Parking, EV Charging Payments, etc., the Acquirer Member shall ensure the applicable fee shall be collected through alternative payment modes at the plaza.
- Exemptions on State/City Highways shall be limited to local exemptions.-
- The Validation order for the local exemptions should be adhered in the following sequence:
  1. Local Exempted Tag- Priority 1
  2. Exception List- Priority 2
- The acquirer should share vehicle class discrepancy (i.e. mismatch between AVC and mapper vehicle class) and exempted vehicle transaction details with plaza operators.
- The acquirer is responsible for the resolution of disputes raised by Issuer or Plaza Operators as per the applicable TAT.
- Providing support and helpdesk to plaza operator.
- Each Member to undergo IT-DR drill annually (switchover from Operational site to

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**Failover/Alternate site)**

- Acquirer shall collect a fee equivalent to two times of the fee applicable to that category of vehicles for tag in hand (due to improper or non-affixation of FASTag) cases.
- Acquirer shall conduct a half-yearly DR (Data recovery) drill.
- Acquirer shall implement the health check API and give the ACK when NPCI sends the health check request by verifying the bank's internal services status.
- Acquirer shall implement the API-admin ping to check the NETC active site check to identify the available site at regular intervals and ensure to send the requests to the active sites.
- Acquirer to list the historical fares of toll plaza along with details on Return journey discount. The details will be made available in the acquirer website to enable the Issuer to verify the fares before raising chargebacks.

**SLAs for re-initiating a Request: -**

The Acquirer shall follow If transaction details are not available in check transaction API.

API	ACK Status	Interval before re-initiating the TXN	Pre-Checks before Re-initiating TXN
Request Pay	202 received	180 sec	Use Check TXN API
	ACK not received	90 Sec	Use Check TXN API
	Read Timed out	90 Sec	Use Check TXN API
	Connection Timed out	90 Sec	Use Check TXN API
	5XX or 4XX error	60 Sec	Use Check TXN API

NOTE: Acquirer can re-initiate the transaction and make sure the transaction gets processed within 72 hours from reader read time.

**Mandating Request details: -**

Acquirer shall ensure the toll plazas to use the request details API to validate the tag before allowing the vehicle to pass.

The Acquirer shall ensure that the toll plaza shall verify the below:

1. Tag IIN, Tag Signature, Pass opted by users
2. Status of the Tag, VC code and other details form the Request details.
3. Status and exception of the tag before allowing IHMCL IINs
4. Mechanisms with request query-exception API or SFTP files
5. Mechanism to verify the request details and query exception API health check at frequent intervals and should switch back to the top available priority (RequestDetails) mechanism once it is available.

**Bank Reconciliation: -**

1. Acquirer shall automate the reconciliation process.
2. Acquirer shall reconcile within 24 hours of files generation
3. Acquirer shall get back to NPCI within 36 hours for any unsettled transactions considering the 72 hours window
4. Acquirer shall not upload more than 2000 disputes for each bulk file upload.
5. Acquirer shall not upload bulk files in the last 24 hours of the TAT expiry for any transaction.
  - a. If TAT = 5days
  - b. File Upload time<=T-1
6. Acquirer shall upload only validated files to the NRS system with Maker-Checker approvals.

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### **3.1.1 Integration with Plaza System**

The plaza operator will deploy a plaza server to process the NETC Lane transactions. The plaza server will receive information from various systems installed on the NETC Lane (i.e. NETC RFID Reader, Automatic Vehicle Classification (AVC), Weigh-in-Motion (WIM), and image capturing camera, etc.) either directly or from lane controllers. Using this information an NETC transaction is initiated. The plaza server will process the transactions and send it in the specified format (as per IHMCL ICD) to the Acquirer host system for fare calculation and transaction processing. As per ICD for custom based plazas, the plaza system will calculate the fare and process the transactions with Acquirer. The communication between the plaza server and the acquirer host can be either online or offline (preferably online) depending on the network connectivity available at the plaza. A plaza can be acquired by a single bank at any point of time.

### **3.1.2 Integration with NETC System**

The Acquirer will integrate their host system with the NETC System (NETC Switch and NETC Mapper) hosted by NPCI. The acquirer has to ensure the transaction data is in the specified format as defined by the NETC API Technology Specification.

The Acquirer host system contains the business rules for fare calculation. On receiving the transaction information from the plaza server, the acquirer host will check the NETC FASTag status from the NETC Mapper, calculate the fare based on the vehicle class received from NETC Mapper and present the transaction message to NETC switch for further processing. For unregistered NETC FASTag, i.e. NETC FASTag details not available in mapper, the acquirer should process the transaction as explained in section 3.2.

### 3.1.3 Fare Calculation

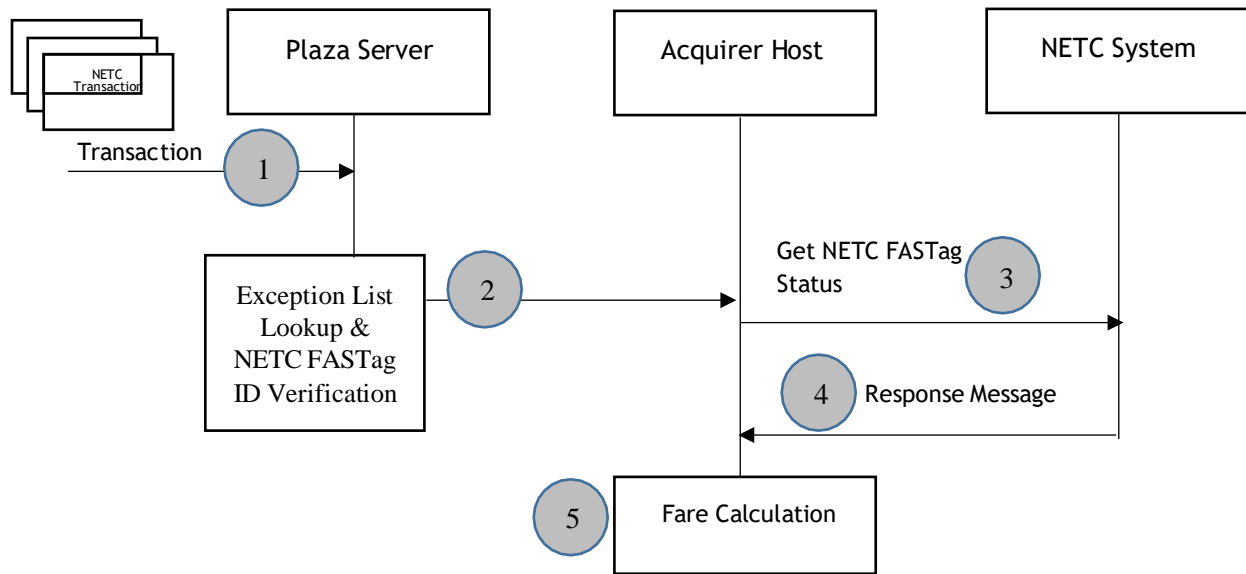


Figure 3 - Toll Fare Calculation

#### Process Flow -

1. The transactions from multiple NETC lanes at plaza will be sent to the plaza server.
2. The plaza server/lane controller will check the NETC FASTag ID format and its occurrence in the exception list. In case the NETC FASTag is in the exception list (Hotlist, Blacklist, Closed/ Replaced or Low Balance) or not an authentic one (as per IHMCL GS1 code/ ICICI GS1 code), the plaza system will collect the fare through other payment modes.
3. The Acquirer host will request the NETC System for vehicle, Issuer details and latest mapper class using the NETC FASTag ID.
4. NETC System checks the NETC FASTag ID and responds with appropriate details (like vehicle class, vehicle registration number, issuing bank identifier, etc.)
5. Using the above information, the Acquirer host will calculate the fare. The business rules and configuration required for fare calculation is specified below.

### Business Rule Configuration:

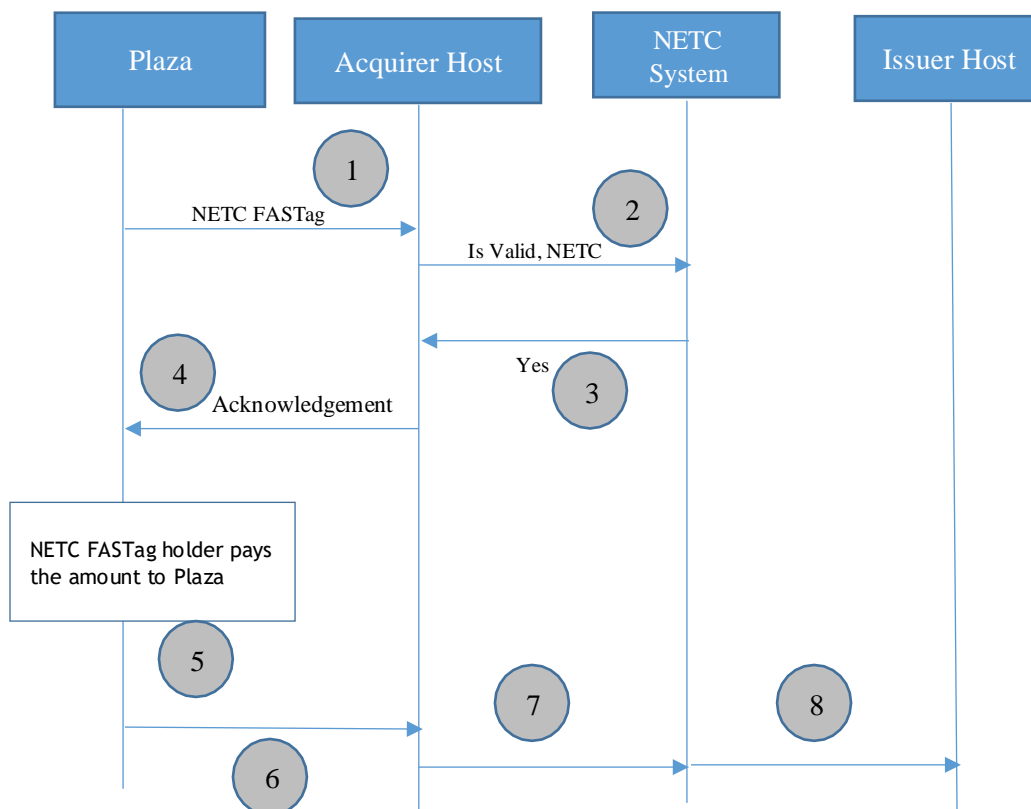
The acquirer host system must be configured with the applicable fare calculation business rules for the acquired plaza. The business rules consist of:

- a) Standard fare rules - This includes the rules for calculating fare as per the standard fare defined for the vehicle class.
- b) Exemption rules - This includes different types of concessions which will be regulated by one or more exemptions applicable for the plaza like-
  - Local resident exemption
  - Applicable discounts or concessions on purchase of monthly or quarterly pass
  - Distance based fare discount or concessions

The standard and exemption rules are defined by the plaza operator (as per the norms stated by concerned authorities). The Acquirer host should support all such business rules defined by the plaza operator.

### Process of pass management through acquirer is illustrated below

#### Pass Management for Acquirer



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### Pass Management Transaction Flow:

Pass management is required at acquirer end as the user can approach the Plaza to purchase a pass. The NETC FASTag holder can pay for the pass amount by various payment modes like NETC FASTag wallet, cash, credit card, debit card, etc.

1. NETC FASTag holders will approach the Plaza operated point of sale, to purchase the pass. Acquirer's client application accessible at plaza, sends a pass issuance request to acquirer host with a NETC FASTag ID and the selected pass type.
2. The request is passed on to the NETC Mapper which validates the NETC FASTag ID. This ensures that Pass is not issued to an Invalid or Unregistered NETC FASTag.
3. The mapper sends the valid/invalid NETC FASTag response to Acquirer Host
4. Acquiring host sends the valid NETC FASTag acknowledgement/ response to the plaza [client application running at Plaza]
5. The plaza operator collects the payment from user and adds the NETC FASTag ID in the pass management system of the acquirer.
6. The pass payment info message (Request Pay message with transaction type NON\_FIN as defined in the NETC API Technology Specification) is sent by the acquirer to the Issuer through the NETC system.

#### **3.1.4 Exception list handling**

NETC mapper contains NETC FASTag exception lists (The exception lists are defined in section 4.2.1.2). The Acquirer host system must synchronize the exception list with the plaza server.

The acquirer can get the exception list using one of the following methods:

- a. The acquirer should periodically fetch the latest exception list from the NETC System and send the same to Plaza server at regular intervals. The plaza server should update this exception list to lane controllers, this interval is defined by IHMCL/NHA on a time-to-time basis.
- b. The acquirer also has an option to download the exception list from the SFTP server.

The detailed process of exception list handling is illustrated in annexure III section 2.

#### **3.1.5 Helpdesk for Plaza Operator**

The Acquirer should provide helpdesk or toll-free number to plaza operator for resolving any issues pertaining to NETC transactions. The Acquirer and the plaza operator should mutually agree upon a process to handle the service requests. It is the responsibility of the Acquirer to ensure all the transactional conflicts are resolved for the plaza operator as per agreed TAT.

### **3.2 NETC Transaction - Payment and Settlement**

National Electronic Toll Collection (NETC) payment system is based on unique identification of the vehicle using passive NETC FASTags. The NETC FASTag is affixed to the vehicle's

windshield, registered on NETC Mapper and destroyed as soon as it is removed or detached from the vehicle. The NETC Readers, deployed at the plaza, shall read and validate the NETC FASTag data. The NETC system is designed to work along with additional systems deployed by plaza operators.

### NETC Payment System Transaction Process

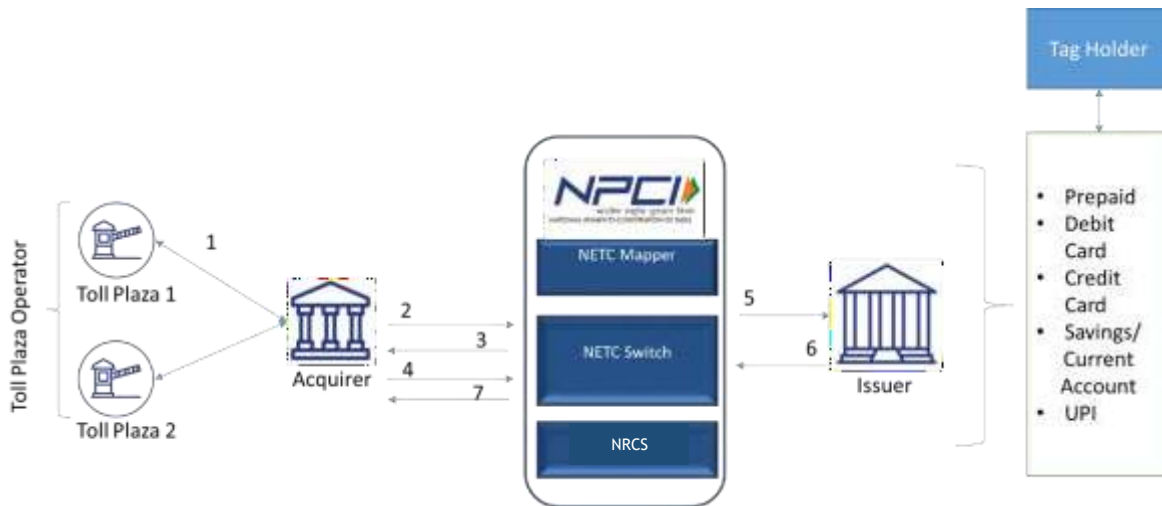


Figure 7 - NETC Payment System

The above diagram illustrates end to end flow of the NETC system. As per the design of NETC solution, there can be multiple acquirers and issuers in the ecosystem. Hence, the transactions from the acquirer host need to be routed to the respective Issuer to debit the NETC FASTag holder's account. This is achieved by central NETC Switch designed and deployed by NPCI which will be responsible for routing all the transactions from different acquirers to the respective Issuer.

#### Process Flow:

1. All the data received from the NETC Lane i.e. RFID Reader (TID, NETC FASTag ID and user memory), AVC (vehicle class), WIM (weight of vehicle) & Image capturing device (image of the vehicle) are pushed to the Plaza Server (directly or through a lane controller). Plaza Server will forward the transaction data to the Acquirer host.
2. Acquiring host will request to the NETC mapper for NETC FASTag details. If NETC FASTag ID is present in the mapper, mapper will respond with the valid NETC FASTag details like, Vehicle Class information, Vehicle Registration Number, TID, etc. If NETC FASTag ID is absent in the mapper, mapper will respond that NETC FASTag is not registered. All NETC transactions, which have been initiated on NETC lane, are supposed to be processed by the Acquirer. Even if a valid NETC FASTag is not registered in NETC Mapper, the plaza operator must be paid for the transaction, and the Acquirer has to calculate the fare on the basis of AVC input provided by the plaza operator in transaction file/API request. In case the AVC input is not available in the Plaza's transaction records, the Acquirer must calculate the fare based on the NETC FASTag vehicle class.



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3. After receiving NETC FASTag details from the NETC Mapper, Acquirer host will perform fare calculation using vehicle class received from the mapper. The mapper vehicle class will override the AVC vehicle class for fare calculation. Any mismatch or dispute needs to be initiated using the NRCS system.
  4. Acquiring host will initiate a debit request to NETC system. The NETC system will validate the NETC FASTag status in the exception list at the time of transaction initiation. Issuer liable for the transactions up to 20 minutes of adding the NETC FASTag IDs in the NETC exception list.
  5. Effective 17th January 2025 onwards, Transactions presented on tags which is in exception for more than 60 minutes prior to the reader read time and is not removed from exception even after 10 minutes of reader read time will be declined by NETC Switch with reason code 176.
  6. Transactions shall be declined at NETC Switch if the tag is in exception for more than 20 minutes before reader read time and not removed from exception even after 10 minutes of reader read time.
  7. NETC System shall forward the debit request to Issuer for debiting the account of the user.
  8. The issuer host will debit the linked NETC FASTag holder's account and send an SMS alert to the NETC FASTag holder. The issuer host will send the response message to NETC System.
  9. NETC system will notify the response to the acquirer host.

The transaction processing between acquirer host, NETC switch, and Issuer host is always online. The transaction settlement between the acquirer and plaza operator will be as per the agreed timelines between acquirer and plaza operator, not exceeding T+1 [settlement day plus one]. All clearing & settlement will be processed through the NRCS system. The clearing and settlement process along with the transaction life cycle is defined in sections [NETC Real-time Clearing and Settlement System](#).

The connectivity between the plaza server and the acquirer host can be real-time or near real-time basis (preferably real-time) the availability of network. The acquiring host and plaza server should ensure that the transaction messages should reach NETC Switch within 15 minutes of transaction initiation i.e. the time at which the vehicle passes the NETC lane. If the transaction is received after 15 minutes and within 3 days, the NETC Switch will process the transaction, however the issuer will have the right to raise the chargeback in case of insufficient balance in NETC FASTag holder's account at the time of transaction processing at issuer host. If a transaction is received after 3 days of transaction initiation NETC switch will decline the transaction.

If vehicle class captured from NETC Lane using Automatic Vehicle Classification (AVC) does not match with the NETC mapper vehicle class [registered vehicle class], in such scenario, the plaza operator will raise the violation and share vehicle image as per ICD specification. Post auditing of the transactions and vehicle images by the acquirer, the acquirer can raise the Debit Adjustment in NRCS system along with the reason for raising the Debit adjustment in MMT and send the reconciliation file [containing clean and disputed transactions] to plaza.

Note: For all transactions received by Acquirer host, fare will be calculated based on the NETC mapper's vehicle class and the plaza operator will receive the fare for that vehicle as per the vehicle class defined on NETC mapper. Any debit/credit adjustment will be settled as per the defined TAT.

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#### Failure Scenarios: -

This section explains how the various failure scenarios are handled during the Online NETC transaction. The transaction flow mentioned above will be considered while describing the failure scenarios.

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- a. Readers at NETC lane are not able to read NETC FASTag details:  
As per the Gazette (no D.L.-33004/99) released by Govt. of India on 7<sup>th</sup> May 2018, if a vehicle user with a valid, functional NETC FASTag or any such device with sufficient balance in the linked account crossing a fee plaza installed with Electronic Toll Collection infrastructure, is not able to pay user fee through NETC FASTag or any such device owing to malfunctioning of Electronic Toll Collection infrastructure, the vehicle user shall be permitted to pass the fee plaza without payment of any user fee. An appropriate zero transaction receipt shall be issued mandatorily for all such transactions
- b. Connection is lost between Lane controller and Plaza Server:  
In this scenario, where connection is lost between lane controller and Plaza Server, the lane controller should authenticate the NETC FASTag data, check the exception list and allow the authenticated vehicle to pass through.
- In case, if the connection is restored, the lane controller should ensure to process the transaction online to NETC system (through Acquirer host) within 15 minutes from the transaction initiation time.
  - If the transaction is beyond 15 minutes, the plaza operator can send the transaction to the NETC system within 3 days but in this scenario the liability of the transaction lies with plaza operator in case there is insufficient balance in the user account at the time of transaction processing at issuer host. In such cases, the issuer can raise the chargeback after the cooling period (currently 15 days) and Acquirer will not have any re-presentment rights.
  - If the transaction is beyond 3 days, the plaza operator (through Acquirer) does not have the rights to present the transaction. The NETC system will decline all such transactions.

*Liability- All such transactions which are raised post 15 minutes TAT but within 3 days of transaction initiation will have to be honored by the Issuer. If the NETC FASTag ID was present in the NETC exception list, Issuer is only liable for the transactions up to 20 minutes of adding the NETC FASTag IDs in the NETC exception list. After 20 minutes the liability of the transactions lies with the toll operator.*

- c. Connection is lost between Plaza Server and Acquirer Host:  
In this scenario, when connection is lost between Plaza Server and Acquirer Host, the transaction data can be shared with the acquirer host by mutually agreed process between plaza operator and acquirer, considering the below scenario's:
- In case the connection is restored the plaza operator/acquirer should ensure to process the transaction online to NETC system within 15 minutes from the transaction initiation time.
  - If the transaction is beyond 15 minutes, the plaza operator/acquirer can send the transaction to the NETC system within 3 days but in this scenario the liability of the transaction lies with the plaza operator/acquirer in case there is insufficient balance in the user account at the time of transaction processing at issuer host. In such cases the issuer can raise the chargeback after the cooling period (currently 15 days) and the acquirer will not have any re-presentment rights.

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- iii. If the transaction is beyond 3 days, the plaza operator/acquirer does not have the right to present the transaction. The NETC system will decline all such transactions.

*Liability- All such transactions which are raised post 15 minutes TAT but within 3 days of transaction initiation will have to be honored by the Issuer provided the NETC FASTag ID is not listed in the exception list at the time of transaction initiation. If the NETC FASTag ID was present in the NETC exception list, Issuer is only liable for the transactions up to 20 minutes of adding the NETC FASTag IDs in the NETC exception list. After 20 minutes the liability of the transactions lies with Acquirer/ Plaza operator.*

d. Connection is lost between Acquirer Host and NETC Online System:

- i. In case the connection is restored the acquirer should ensure to process the transaction online to NETC system within 15 minutes from the transaction initiation time.
- ii. If the transaction is beyond 15 minutes, the acquirer can send the transaction to the NETC system within 3 days, but in this scenario the liability of the transaction lies with the acquirer in case there is insufficient balance in the user account at the time of transaction processing at issuer host. In such cases the issuer can raise the chargeback after the cooling period (currently 15days) and the acquirer will not have any re-presentment rights.
- iii. If the transaction is beyond 3 days, the Acquirer does not have the rights to present the transaction. The NETC system will decline all such transactions.

*Liability- All such transactions which are raised post 15 minutes TAT but within 3 days of transaction initiation will have to be honored by the Issuer provided the NETC FASTag ID is not listed in the exception list at the time of transaction initiation. If the NETC FASTag ID was present in the NETC exception list, Issuer is only liable for the transactions up to 20 minutes of adding the NETC FASTag IDs in the NETC exception list. After 20 minutes the liability of the transactions lies with the acquirer.*

e. NETC FASTag ID is not present in the mapper:

In this scenario, NETC system will validate the NETC FASTag's IIN/ NETC FASTag ID and will switch the transaction to the respective issuer. In all such scenarios the acquirer needs to calculate the fare based on the AVC vehicle class as the NETC mapper vehicle class does not exist. In case the AVC input is not available in the plaza's transaction records, the Acquirer must calculate the fare based on the NETC FASTag vehicle class.

*Liability- All such transactions which are raised within 3 days of transaction initiation will have to be honored by the Issuer provided the NETC FASTag ID is not listed in the exception list at the time of transaction initiation. If the NETC FASTag ID was present in the NETC exception list, Issuer is only liable for the transactions up to 20 minutes of adding the NETC FASTag IDs in the NETC exception list. After 20 minutes the liability of the transactions lies with the acquirer/Plaza operator.*

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In case of proved fraudulent transactions due to the cloned NETC FASTags, NHAI/IHMCL will review and compensate the issuer on case-to-case basis. NHAI/IHMCL will create a separate fund to compensate such fraudulent transactions, here on referred to as “NHAIIHMCL Compensation Fund”. The process for compensating such fraudulent transaction is defined in Part-II of this document.

f. Connection is lost between NETC System and Issuer Host:

In this scenario, when no connection is established between the NETC system and IssuerHost, NETC system sends debit advice messages to the Issuer host till an acknowledgement is received or till the settlement cut off time (whichever is earlier). In all such cases transactions will be reported as Deemed Accepted to acquiring bank.

### 3.3 Compliance for Acquirer

- i) Acquirer is responsible for ensuring compliance with any privacy related regulations of the government which includes sharing of NETC transactions information with any third party. Also, responsible for payment of all government taxes related to the NETC project.
- ii) Acquirer should ensure that all the transactions which are processed by at the plaza server (i.e. on-us and off-us transactions) should be sent to the NETC System for processing.
- iii) Acquirer has to adhere to the CCH specifications [Interface Control Document (ICD) defined by IHMCL/NHAI] for processing and acquiring of the plaza transactions.
- iv) Acquirer should ensure the correct implementation/ configuration/ revision of the business rules for the calculation of the toll fare.
- v) The Acquirer should provide the helpdesk service to the Plaza operators.
- vi) Acquirer should ensure to transmit all the transaction processed records within specified TAT.
- vii) Acquirer should perform daily reconciliation of transactions with the plaza operator.
- viii) Prohibition to use NETC Logo/ Trademark/ Network
  - Upon termination of the NETC Membership, the Member should abstain from further use of the NETC trademark with immediate effect. Failure to comply with the same could invite legal proceedings.
  - Members that have been suspended from NETC Membership would be deprived of the privilege to use the NETC for any transactions with immediate effect.
  - Any pending dispute pertaining to transaction errors not resolved before the Member is suspended will be recovered from the respective Member's settlement account.
  - The suspended Member would not disclose any information regarding the
  - NETC network, or any knowledge gained through participation in the NETC network to the outsiders. Failure to comply with the same would be treated as breach of trust and could invite legal penalties.

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#### Section 4: Issuer

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##### Section covers:

- Roles & Responsibilities
- NETC FASTag Issuance
- NETC FASTag Holder Registration
- Addition and Removal operations of NETC FASTag ID in Exception list
- Compliance of Issuer

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## 4.0 Issuer

### 4.1 Roles and Responsibilities

The role of the issuer includes the following:

- To tie up with Tag Manufacturer for the issuance of NETC FASTag containing the digitally signed NETC FASTag data, this includes generation, distribution and installation of the necessary cryptographic keys to process NETC transactions.
- To create distribution infrastructure for issuance of the NETC FASTags.
- To facilitate the NETC FASTag issuance through various online channels like online web portal, mobile application etc. In the online issuance process the issuer needs to dispatch the NETC FASTags securely through courier.
- Issuers should validate the vehicle details amongst other user details provided by users against the vehicle RC copy and other proof submitted by user before NETC FASTag registration in NETC Mapper. Issuer will be liable in case of mismatch of information or any incorrect NETC FASTag issuance.
- Issuers shall ensure that correct or valid VRN is captured in the system at the time of issuance of a FASTag to an assigned vehicle. Issuers must ensure closure of all the tags issued on incorrect VRN.
- Issuers should also provide top up (for prepaid linked account) facility through all possible channels like mobile and internet banking systems, UPI, etc.
- Issuers shall ensure subsequent recharge done by users on their FASTag wallet shall be as per the defined threshold set
- Issuers shall ensure using only '4784' MCC (Merchant Code Category) to pass for depositing funds in NETC FASTag wallet.
- Issuer shall provide AutoPay feature for FASTag without pre-debit notification.
- Issuers shall ensure that only one tag is issued for one vehicle at a given point of time. Only the latest issued tag must stay active, and all the previous tags must be closed.
- Issuers shall conduct a check for the migrated customers for any previously hot-listed tags. If found, transactions on the latest tag shall be blocked until pending dues are cleared and all previous tags are closed.
- Issuers shall provide the platform to the users for generating the migration code. Also issuers shall ensure that all the tag issuance for such migrating users will be allowed only after the validation of the migration code.
- Tag issuance must be done after verification of the correct VRN against the RC copy provided by the user.
- For new vehicles on which tags are registered using the VIN (issued only through OEM dealers), issuers must update the correct VRN of the same, using Vahan or RC copy within 90 days from the date of issuance of tags.
- Issuers must ensure closure of all the tags which have been issued on VIN/Chassis number and not updated to the VRN after 90 days.
- Issuers shall ensure to verify the VRN through Vahan records before tag registration and update the records for all tags issued on VIN/Chassis number.
- In case, Vehicle records are not available on Vahan, Issuers shall complete the FASTag registration as per the details available on the RC copy of the vehicle collected from the user.
- Rigorous inventory management of NETC FASTags starting from NETC FASTag

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personalization to NETC FASTag affixation by bank.

- Issuer must comply with the new design of NETC FASTag released with inclusion of UPI QR code for recharge.
- Issuer should provide NETC FASTag linked UPI QR Code generator on their website/app to enable their existing user base to generate QR Code for their FASTag Recharges
- Issuer shall provide the personalised VPA string for UPI QR Code generation as mentioned in the Tag Marks and Specs document released from time to time
- Issuer shall ensure that the latest designed tags are issued at all channels
- Issuer should ensure Tag affixation is done as per the latest guidelines shared by IHMCL. For non-compliant cases, issuers shall take necessary actions as per the guidelines.
- As per the guidelines released by IHMCL, Issuer must submit sample tags along with testing reports of quality of NETC FASTag to IHMCL including detailed information as mentioned in the relevant guidelines as shared by IHMCL
- Integration of the Issuing Host system with the NETC System.
- To manage the exception list defined in the NETC Mapper.
- To register the NETC FASTag holder onto the NETC Mapper.
- To process online transactions request received from NETC System and validate the digital signature of the NETC FASTag. In case the signature validation fails the NETC FASTag needs to be added in hotlist/ low balance exception list. The NETC FASTag validation process at issuer end will be enforced once the toll transaction messages contain respective values in the relevant fields required for NETC FASTag's signature validation.
- To reimburse the acquirer for payment transactions.
- To securely transmit the necessary cryptographic keys needed for the correct operation of the system to any other party.
- The Issuer is also responsible for honoring the debit adjustment raised by acquirer as per the applicable TAT. Also, Issuer needs to take corrective action on acceptance of debit adjustments with respect to updating the mapper vehicle class.
- Perform fraud monitoring by verification of the transaction data.
- To provide support and toll-free helpdesk services to NETC FASTag Holders.
- Issuer to undergo IT-DR drill annually (switchover from Operational site to Failover/Alternate site)
- Issuers shall conduct a half-yearly DR (Data recovery) drills and report the same to the NETC production team
- Issuers shall implement the health check API and give the ACK when NPCI sends the health check request by verifying the bank's internal services status.
- Issuers shall implement the API-admin ping to check the NETC active site check to identify the available site at regular intervals and ensure to send the requests to the active sites

*Note — Process of Pass issuance & signature validation by Issuer will be implemented in second phase.*



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The Issuer bank shall follow the following for performing multiple operations on a single tag.

**Operations on a single Tag**

API	Operations	Interval before performing any second operation on same tag	Pre-Checks before second Request for any activity
Request Manage Tag Entries Request Manage Tag Exception	Register	5 sec	Use Check Request Details
	Update	5 Sec	Use Check Request Details
	ADD to any exception	1 Sec	Use Check Request Details
	REMOVE from any exception	1 Sec	Use Check Request Details
	CLOSE	1 Sec	Use Check Request Details

**Reconciliation: -**

1. Issuers shall automate the reconciliation process
2. Issuers shall complete their reconciliation within 24hours of final files generation
3. Issuers shall get back to NPCI within 36hours for any unsettled transactions considering the 72-hour window
4. Issuers shall upload up to 2000 records for each bulk file upload.
5. Issuers shall not upload bulk files in the last 24 hours of the TAT expiry for any transaction.
  - a. If TAT = 5days
  - b. File Upload time<=T-1
6. Issuers shall upload only validated files to the NRS system with Maker-Checker approvals.

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#### 4.1.1 Customer onboarding and Re-KVY Process

##### Customer Onboarding

##### **A. PoS and Tag issuance**

- i) Issuers shall ensure that PoS set up is available at toll plazas with sufficient tag inventory. Dedicated PoS setup with sufficient tag inventory is mandatory at plazas where the Issuer is also an Acquirer.
- ii) Issuers shall ensure that their tags are sold only through authorized PoS agents of the Issuer (authorization of the PoS to be done by Issuer). Issuers can tie-up with multiple authorized agents for tag issuance.
- iii) Issuers shall undertake detailed KYC (Know Your Customer) of PoS agents (new and existing). The KYC details of each PoS agent of the Issuer shall be available with the Issuer.
- iv) It shall be the responsibility of the Issuers to enter into necessary agreements with various entities such as fuel stations, Fee plazas, etc. for setting up POS.
- v) Issuer shall ensure availability of FASTag at sufficient branches and have agents to issue tags at their branches.
- vi) Issuers/authorized PoS agent shall ensure fixation of tag on vehicle windshield as per applicable standards and guidelines for tag fixation issued by NPCI.
  - In case of improper tag fixation, a penalty of Rs. 10,000/- shall be imposed on Issuers for each such case.
  - NPCI in coordination with IHMCL can take necessary steps to discontinue Issuer onboarding in the event of such cases exceed 5% of monthly issuance.
- vii) Online sale of tags is permitted through Issuer App/portal/website. In case of online sale through other channels prior approval shall be taken from IHMCL. Issuers to share the existing list of online/sales channels with IHMCL/NPCI. Tags sold through online channels shall be activated only at the Issuers portal after completion of KYV (Know Your Vehicle) process as mentioned in B (x) below. No transaction shall be permitted on these tags till the completion of the KYV process. In case of non-compliance, NPCI in coordination with IHMCL shall discontinue Issuer onboarding or any other action as may be deemed necessary. Issuers shall abide by the guidelines issued by the regulatory body/ies for distribution through any channel from time to time.
- viii) Issuance Charges: Issuers shall strictly adhere to standard charges for tag issuance for VC04 class customers as under:
  - Issuance/Reissuance Fees: Rs. 100/-
  - Security Deposit: Rs. 200/-
  - Minimum Recharge: Rs. 100/- (customer shall have the option for additional recharge)
- ix) Issuer shall not impose/maintain any threshold amount for VC04 apart from the security deposit and ensure compliance to NHAI circular Ref. IHMCL/100%FASTag/ETC-Ops/2020/23 dated 06.02.2021. In case any instances of Issuer imposing such thresholds are observed, NPCI in coordination with IHMCL may take necessary action to discontinue the FASTag issuance services of the Issuer or any other action as may be deemed necessary.

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- x) Issuers shall ensure that the charges are clearly informed to customers prior to issuance of tags. These charges shall be displayed on Issuers website/portal.
  - xi) Printed information/booklet giving information to the customer about the charges along with customer care number, email address and other relevant details of the Issuers should be available with the PoS agents for handing over to customer while issuance of tags.
  - xii) POS agent shall not be allowed to update/modify VRN of any vehicle.

#### **B. Mandatory Documents and steps to Onboard New Customer**

- i) Following set of documents shall be verified and copy to be uploaded through Issuer app during customer onboarding.
  - Vehicle Registration Certificate (RC) (Digital copies are permitted only through Parivahan or DigiLocker and no copies should be uploaded with Masked Data)
  - Clear image of vehicle (front and side) and tag.
  - Front Image shall clearly capture Affixation of Tag and vehicle registration No. Side Image shall carry capture the Vehicle axles A clear image of the issued tag shall be captured.
  - Agent to enter VRN + Chassis number and request for VAHAN verification.
  - Verification with VAHAN
  - Mobile number of customers
  - Tag can only be issued in case of VAHAN verification. In case VAHAN verification is not possible, Issuers can issue tag and undertake the verification in a maximum of T+3 day. The responsibility of verification of documents lies with the Issuers.
- ii) All the documents/pictures should be legible, clear and verifiable
- iii) Tags shall be activated in real time. However, Issuer to validate the data entered by the agent within T+3 days. No change in FASTag data can be performed by an agent. In case the verification through VAHAN or Issuer is not done within T+3 days, the Issuer shall blacklist the tag.
- iv) Confirmation/Validation with VAHAN database and correctness of the data entered and documents uploaded shall be the responsibility of the Issuer.
- v) In case mismatch/error in data and image, a penalty of Rs. 10,000/- shall be imposed on the Issuer per such error/mismatch.
- vi) Agent module shall be designed in such a manner that facility to capture real time pictures and documents is done instantly for customer convenience.
- vii) Customer KYC shall be performed as per regulatory guidelines.
- viii) Post successful entry of information, agent shall handover the NETC FASTag to the vehicle owner and it's the responsibility of Issuers agent to affix the Tag on windshield of the vehicle. Agent shall ensure that the tag is affixed on the windshield as per tag affixation guidelines.
- ix) No transaction on unregistered tag shall be allowed.
  - Issuers shall register the FASTags in NETC Mapper when it is registered in the Issuer system.

- NETC Mapper after receiving NETC FASTag ID, shall add all the details provided by the Issuer host in the Mapper's database and update the status to 00 after activation of tag.
- NETC Mapper then sends response message to Issuer host that NETC FASTag has been added successfully or not added in the mapper database. In case NETC FASTag is not successfully registered into the mapper, the Issuer shall re-initiate the registration process. Issuer shall ensure the FASTag is issued only after successful registration of FASTag into the NETC Mapper
- After receiving response message from the NETC mapper, the Issuer Host shall forward the response message to the Client Application at the Point of Sale.

**x) Note for strict compliance by Issuer:**

- Every issued tag is linked to a unique VRN and chassis number. In case of new vehicles where VRN is not available, chassis number is mandatory. Issuers to ensure that the VRN is updated within 90 days and in case there is failure to update the VRN, Issuer shall close these tags with the reason of non-compliance.
- Tag details are verified with VAHAN database or Issuer has verified the data.
- Each issued tag is associated with clear images of the vehicle (front with tag affixed & side with axle and a clear picture of the tag)
- Each tag is linked to a mobile number. Issuers to ensure appropriate KYC associated with the mobile number.

xi) **Incorrect Vehicle Class:** It is the responsibility of the Issuer to verify /map the correct Vehicle Class in NPCI mapper. Toll plazas can report such cases and Issuers to ensure necessary mapper class update and take corrective measures in such cases.

**Re- KYV (Know Your Vehicle)**

1. Already issued tags shall comply with the KYV guidelines as mentioned below:

- Every issued tag is linked to a unique VRN and chassis number. In case the tag is issued on new vehicles where VRN is not available, chassis number is mandatory. Issuers to ensure that the VRN is updated within 90 days and in case there is failure to update the VRN, Issuer shall close these tags with the reason of non-compliance.
- All tags shall be verified with VAHAN database or Issuer shall verify the tags.
- Each issued tag is associated with clear images of the vehicle (front with tag affixed & side with axle) and clear image of the issued tag.
- Each tag is linked to a mobile number. Issuers to ensure appropriate KYC associated with the mobile number.
- For the above mandatory requirements, Issuers shall undertake necessary customer outreach programs through suitable communication channels.
- Issuers shall provide customers with a platform, such as an app or WhatsApp, to conduct online KYV verification and upload documents & images.

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2. The KYV process should also coincide with OVOT (one-vehicle-one tag) mandate. Customers to log in the bank portal and select/enter their Vehicle Registration Number (VRN). The Issuer will then display a list of all active tags associated with the VRN, excluding those marked with status 06. If multiple tags are open, customers will be informed that previous tags will be closed, and their consent will be obtained. The Issuers will maintain low balances on such tags for 15 days, allowing for any chargebacks, before moving them to closed status. (following the OVOT process flow)
  3. If any tags attached to the VRN are hotlisted (indicating a negative balance), the Issuer will generate a UPI/QR code ([NETC.VRN@bank](mailto:NETC.VRN@bank) handle) for the outstanding amount. Customers will be requested to pay this amount, and upon receipt of funds, the Issuer will promptly close these tags. Until this process is complete, customers will not be able to finalize the KYV verification, and the tag KYV status will remain incomplete. After 15 days, the Issuer shall verify the status of other tags. If tags from other Issuers are closed, the KYV status will be updated to verified.
  4. Customers are required to upload a copy of their RC (Registration Certificate) as part of the KYV process. Digital copies are permitted only through Parivahan or DigiLocker (No copies with Masked Data), and Issuers shall implement appropriate checks to ensure compliance.
  5. Issuers to ensure that customer upload the Vehicle Image - front and side: Front Image shall clearly capture affixation of Tag on windshield and vehicle registration number. Side image shall carry capture the Vehicle axles. All images shall be captured in sufficient light and should be clear and legible.
  6. KYC shall be performed as per regulatory guidelines.
  7. Transactions will not be permitted on unregistered tags.
  8. Issuers to follow this process on staggered manner. First enable Re- KYV process for Tags which are in hotlisted category and customers aren't having documents as per this guideline.
  9. Re-KYV process is to be done every 3 years. However, in case tags are in hotlist and deficiencies are observed in terms of documentation/KYV details, re-KYV process is to be undertaken by Issuers.
  10. Issuers to ensure that appropriate mechanism is in place to identify and replace faulty/damaged tags.
  11. All issued tags which are more than 5 years old are to be replaced by the Issuer on best effort basis.
  12. Issuers to identify cases of manual entries against their issued tags and shall ensure that such cases are not due to faulty/damaged tags. Immediate replacement of such tags shall be done by the Issuers.

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## 4.2 NETC FASTag Issuance

Issuer is responsible for issuance of the NETC FASTags to the vehicle owners and has to adhere to the process described below:

1. Engage with NPCI empanelled NETC FASTag Manufacturers to procure and personalize the RFID NETC FASTag
2. Set up user touch points which will act as Point of Sales for NETC FASTag Issuance. e.g. Large merchants, Petrol pumps, vehicle dealers, etc.
3. Issuer shall be allowed to issue the FASTag on VIN (Vehicle Identification Number) from OEM (Original Equipment Manufacturer) dealer location for the new vehicles only.
4. Issuers shall ensure all FASTag issuance to be done using latest version of Vahan Integration API only. In case of no response from Vahan, banks are allowed to do the manual entry for completion of tag registration
5. For FASTag to be issued to Electric Vehicles, Issuers shall ensure the issuance, creation of vehicle class, new tag design etc. as specified for the electric vehicles.

Issuer is also responsible for issuance, closure and replacement of the NETC FASTags to the vehicle owners and has to adhere to the one vehicle one tag policy. Tag issued without customer consent or dummy VRN update resulting in inconvenience to other users due to Forceful Tag Closure shall levy penalty to the issuer.

### 4.2.1 NETC FASTag Manufacturing and Personalization

Only NPCI Authorised NETC FASTag manufacturers should be engaged by Issuer to manufacture NETC FASTags. These NETC FASTags will be personalised by manufacturer based on the keys provided by Issuer as per the process illustrated below in figure 4 – Tag Personalization Process.

Issuer will have to ensure the robust inventory management for NETC FASTags. Once the NETC FASTags are personalized with EPC ID, NETC FASTag vehicle class, dummy vehicle registration number and digital signatures, the NETC FASTags are live. Banks should ensure to have adequate risk management controls on NETC FASTag movement after the NETC FASTag personalization.

Roles and responsibilities of NETC FASTag Manufactures:

- 1) The NETC FASTag manufacturer manufactures NETC FASTag containing the digitally signed NETC FASTag data, and participates in the generation, distribution and installation of data in the NETC FASTag.
- 2) Perform Inventory management of NETC FASTags: NETC FASTag manufacturer should keep track of all their NETC FASTags in the inventory and should keep it in a secure location (vault/warehouse) with clear defined access authorized personnel. NETC FASTag manufacturers should be able to share the NETC FASTag details with Issuer/NPCI whenever requested.
- 3) NETC FASTag manufacturers should have a quality check mechanism where the

inventory should be examined as a part of NETC FASTag personalization before delivering to banks. Any improper NETC FASTags should be destroyed. Such NETC FASTags information should be shared with Issuers and maintained in repository.

- 4) NETC FASTag Manufacturers shall adopt the security control procedures and policies specified in document “Security Guidelines for NETC” as minimal protection for NETC product.
- 5) NETC FASTag manufacturer should ensure that correct TID is shared with bank for generation of NETC FASTag data. NETC FASTag details received from issuer should be correctly placed in the NETC FASTags
- 6) The NETC FASTag manufacturer should ensure all the necessary security guidelines while delivering/handing over NETC FASTags to the Issuers.
- 7) NETC FASTag manufactures must comply with the latest design of NETC FASTag.
- 8) Tag Manufacturers must use the personalized VPA string for FASTag linked QR code generation as shared by the Issuer.
- 9) The NETC FASTag manufacturer should ensure the artwork mentioned in the NETC FASTag Marks specification document is carried out while manufacturing any NETC FASTag.

#### NETC FASTag Personalization Process

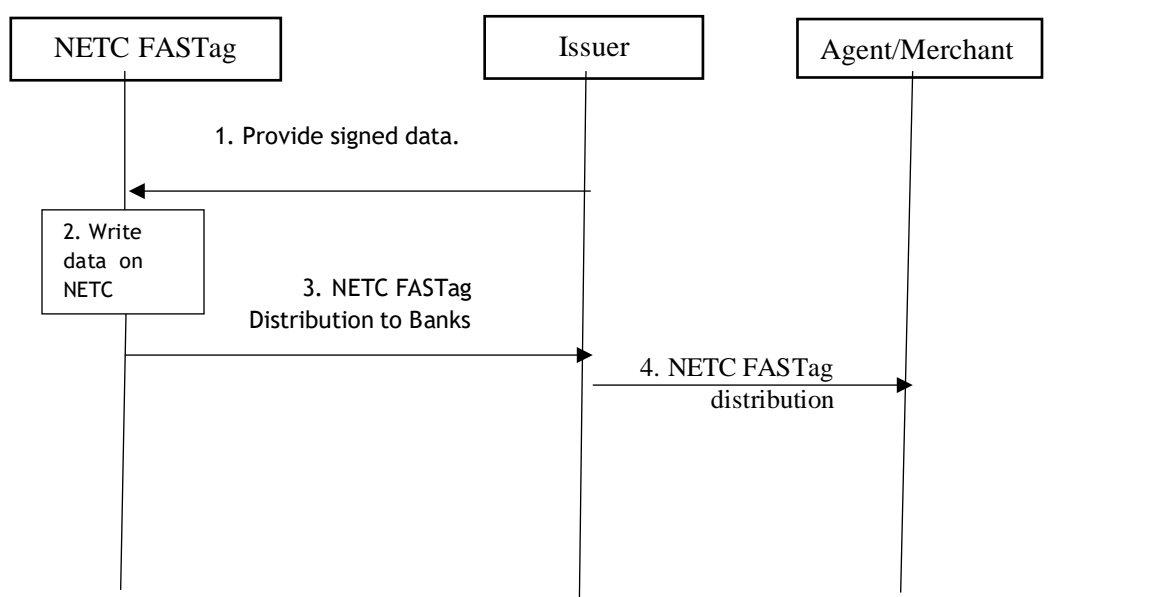


Figure 4 - NETC FASTag Personalization Process

1. Issuer shall send signed data to NETC FASTag manufacturer.
2. After getting data from the Issuer, NETC FASTag manufacturer will write the signed data on the NETC FASTag and lock it permanently.
3. Personalised NETC FASTags are then delivered to the Issuer.
4. Issuer distribute the personalised NETC FASTags to the various Agent/Merchant locations for its issuance.

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### Failure Scenarios

1. Wrong personalisation of NETC FASTags i.e. incorrect data is personalised in the NETC FASTags, all such NETC FASTags should be destroyed.
2. If NETC FASTags are lost during the distribution process, then those NETC FASTags must be blocked and added to the Hotlist.
3. If NETC FASTags size and format is not as per the NETC FASTag Marks specifications document issued by NPCI, all such NETC FASTags should be destroyed.
4. NETC FASTags Fixation rules should be met properly. The welcome kit booklet should have pictographic instruction of fixing the NETC FASTag.

*Note: Issuer has to ensure that necessary process to be implemented to avoid any of the above failure scenarios.*



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#### 4.2.1.1 Set up Touch Points for NETC FASTags Issuance

Issuer can tie up with multiple agents to set up user touch points called Point of Sale (POS). These agents can issue NETC FASTags on behalf of Issuer. It shall be the responsibility of the Issuer to enter into necessary agreements with various entities such as Fuel Stations, Plazas, etc. for setting up POS.

The fixation of NETC FASTags to the vehicle windshield will be performed by the issuer or its authorised agents as per the NETC FASTag Marks Specifications document. For all the online NETC FASTag issuance request, where the NETC FASTag is dispatched through courier to the vehicle owner, the NETC FASTag will be affixed by the vehicle owner or issuer's authorised person. The primary functions that are performed at the POS locations are:

- User Registration (NETC FASTag Issuance, Fixation and Mapper Registration)
- Top-up facility

Issuer can register the vehicle owners to use the NETC services. Detailed process of registration is defined in [Annexure III section 1](#).

*Note: End users or users can pay for the NETC FASTags either by Cash, Cards or Accounts, etc. Issuer can charge the cost of NETC FASTags to the vehicle owner.*

#### 4.2.1.2 Maintaining Exception List

Issuer should update various exception lists on NETC Mapper. The exception list will consist of: -

1. **Blacklist:** A blacklist is a list of NETC FASTag ID which will not be accepted at Plaza. The law enforcement agencies, GOI, and RBI can request issuer or acquirer to add/remove the NETC FASTag ID in the blacklist.

The Blacklist is governed by following rules:

- ❖ Member should not issue a new NETC FASTag to a vehicle where a vehicle linked NETC FASTag is already present in Blacklist in NETC Mapper.
- ❖ NETC FASTag can be added in blacklist only by an Issuer [own/registered NETC FASTag only]
- ❖ A new NETC FASTag cannot be registered in NETC mapper with Blacklist exception code

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- ❖ A vehicle with a NETC FASTag in Blacklist status should be asked to pay using different mode of payment other than NETC FASTag
2. Low Balance List: If the balance in the user's account linked to the NETC FASTag goes below a threshold limit, that NETC FASTag ID will be added to this list and the notification is sent to the user for low balance. This list will be provided by the Issuer. A vehicle with a NETC FASTag in Low Balance status should be asked to pay using different mode of payment other than NETC FASTag.
  3. Exempted Vehicle Class List: No toll fare will be charged for the vehicles which come under this category at National Highways as defined by the respective authorities from time to time. Few examples are mentioned below: -
    - a) VVIP convoy
    - b) Ambulance
    - c) Fire brigade
    - d) Police Vehicle
    - Only authorized Members will be allowed to register/add/update a vehicle in exempted exception code.
    - Exempted Tags shall be applicable exclusively on National Highways. For other use cases such as Parking, EV Charging Payments, etc., the Acquirer Member shall provision for collection of applicable fee through alternative payment modes at the plaza level.
    - Exemptions on State Highways shall be limited to local exemptions, subject to official communication from IHMCL to the respective State Plaza Acquirer/operators.
  4. Invalid Carriage: All the vehicles which are used by handicapped people. Only authorized Members will be allowed to register/add/update a vehicle in exempted exception code. No Toll fare will be charged for such NETC FASTags.
  5. Hotlist: NETC FASTags of vehicles in negative balance or with violation. The hotlist is governed by following rules:
    - ❖ NETC FASTag can be added in hotlist only by an Issuer [own/registered NETC FASTag only]
    - ❖ NETC FASTag can be added in hotlist by issuer if the vehicle mapped with the NETC FASTag defaults on payment or vehicle mapped with the NETC FASTag violates NETC rules
    - ❖ A new NETC FASTag cannot be registered in NETC mapper with hotlist exception code
    - ❖ A new NETC FASTag cannot be issued to a user if a vehicle linked NETC FASTag is in hotlist exception code.
    - ❖ A vehicle with a NETC FASTag in Hotlist status should be asked to pay using different mode of payment other than NETC FASTag

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6. Closed/ Replaced: If a user with the mapped NETC FASTag replaces the NETC FASTag or closes the NETC FASTag then such NETC FASTags should be added in exception code closed/ replaced by the Member after due diligence and removing the NETC FASTag from other exception codes.

**Closed/ Replaced exception list is governed by following rules:**

- ❖ NETC FASTag can be added in 06 only by an Issuer [own registered NETC FASTag only] after removing the NETC FASTag from all the existing exception codes
- ❖ Once a NETC FASTag is added in 06 exception code, the NETC FASTag cannot be removed from 06 or added in any other exception code
- ❖ NETC FASTag cannot be added in 06 while registration
- ❖ A vehicle with a NETC FASTag in Closed/ Replaced status should be asked to pay using different mode of payment other than NETC FASTag

*Note: The exception list types will be modified as per the future requirement of the program. The modified exception type and its business rules will be specified to the Members by a circular from time to time*

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### **4.3 Setting up user service channels [Helpdesk]**

Issuer shall be responsible for providing toll free user service number to the NETC FASTag holder for their disputes and concerns. The user service number needs to be mentioned on the NETC FASTag, usage guide, website and any other mode of communication.

- User helpline to be available 24x7
- Issuer are also advised to have dedicated call centre agents for NETC program
- Issuer resolution reports to be made available as and when required by the regulating authority

### **4.4 NETC FASTag Holder Registration**

Process for NETC FASTag holder registration is defined in Annexure III.

### **4.5 Addition and Removal of NETC FASTag ID in Exception list**

Process of addition or removal of NETC FASTag id in exception list is defined in [Annexure III section 2](#).

### **4.6 NETC FASTag linked account**

#### **4.6.1 KYC Compliance**

The NETC FASTags issued by an issuer can be linked to any of the following accounts [underlying payment instrument]

- a) Savings account
- b) Current account
- c) Prepaid account
- d) Cards
- e) UPI

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It would be the responsibility of the issuer to check the KYC guidelines for the NETC FASTag linked payment instrument [described above] as per the KYC guidelines issued by Reserve Bank of India (RBI) from time to time. In case an existing user of the Member is willing to avail the NETC FASTag for the program, Member can link one of the existing accounts [mentioned above] to the NETC FASTag only if the KYC mandates as per Reserve Bank of India are in place for that account type.

#### **4.7 Compliance of Issuer**

- a) Issuers are responsible for ensuring compliance with any privacy related regulations of the government which includes sharing of NETC transactions information with any third party. Also, Issuer is responsible for payment of all government taxes related to the NETC project.
- b) Issuer should comply with proper KYC checks as stipulated by RBI and other regulatory bodies, regulating the activities of the Members before registering a user for NETC. Similarly, issuer has to comply with RBI policies and guidelines of respective products which will be linked to the NETC FASTag.
  - i. The issuer should honour all the NETC transactions which are received from NETC System within Fifteen minutes for online transaction processing and up to 3 days with limited liability as explained in the chapter 3, section 3.2 Failure scenarios.
  - ii. Similarly, the issuer should also honour all the Debit adjustments raised by acquirer and for all accepted debit adjustments, Issuer should update the mapper vehicle class. For the cases where debit adjustment is not acceptable the Issuer can raise chargeback with valid evidences.
- c) The issuer should ensure the correct issuance and placement of NETC FASTag on the vehicle and also ensure that only one NETC FASTag is affixed on the vehicle at any point of time. At the time of registration if the vehicle is already having prior NETC FASTag, the issuer should remove the existing NETC FASTag and place new NETC FASTag as per the norms specified.
- d) At the time of registration, the issuer may capture the vehicle image. Issuer should keep the images for the period of at least one year. It is recommended to create an archive for storing of images for dispute purposes.
- e) The issuer should send the transaction alert (SMS) to the NETC FASTag holder post transaction processing. The SMS should contain details of Plaza, Toll Fare Amount and Date and Time, etc.
- f) The Issuer should print the toll-free helpdesk number on the NETC FASTag.
- g) The Issuer can maintain a security deposit for the NETC FASTag account.
- h) The Issuer should ensure KYC of underline payment instrument link to NETC FASTag.
- i) The Issuer should mention/communicate all the charges applicable to NETC FASTag holder for the NETC service.
- j) The Issuer should send welcome kit booklet to the NETC FASTag holder with pictographic instruction of fixing the NETC FASTag.
- k) The Issuers should provide multiple modes to top up the NETC FASTag linked wallets. As per guidelines from IHMCL/NHAI, the Issuer should provide UPI and BBPS recharge mode mandatorily.
- l) Prohibition to use NETC Logo/Trademark/Network:

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- Upon termination of the NETC Membership, the Member should abstain from further use of the NETC Trademark with immediate effect. Failure to comply with the same could invite legal proceedings.
  - Members that have been suspended from NETC Membership would be deprived of the privilege to use the NETC Network for any transactions.
  - Any amount towards pending dispute pertaining to transaction errors not resolved before the Member is suspended will be recovered from the respective Member's settlement account.
  - The suspended Member would not disclose any information regarding the NETC network or any knowledge gained through participation in the NETC network to outsiders. Failure to comply with the same would be treated as breach of trust and could invite legal penalties.

#### **4.8 Handling of damaged and/ or disabled NETC FASTag linked account**

In case the NETC FASTags are damaged or NETC FASTag linked account is closed/disabled, the Issuer can set the status of the NETC FASTag as Closed/ Replaced by updating the exception status of the NETC FASTag. NETC switch will decline all the transactions with inactive NETC FASTag status. Issuer needs to remove the physical NETC FASTag from the vehicle within 6 months of the NETC FASTags getting inactive, after 6 months the NETC FASTags will be removed from NETC mapper [including any of the exception list]. Acquirer will be able to get the list of inactive NETC FASTags in NETC mapper and this list needs to update at the Plaza. Once inactive the NETC FASTag cannot be made active again. During the NETC FASTags inactive state:

- Online transactions will be declined however any dispute on previous transactions will still be executed by NRCS system.
- The NETC FASTags cannot be added into any of the exception list

#### **4.9 Reasons to add/ register NETC FASTags in exempted or Invalid Carriage exception code**

A vehicle can be exempted from paying the toll fare on NH Plaza as per details defined by NHAI/IHMCL in Notification (GSR 950 (e) Rule 11 of National Highways Fee (Determination of rates and Collection) Amendment Rules 2010) released on 5<sup>th</sup> December 2008. To avail global exemption from toll fare on NETC lane of national highways, a written order from appropriate authorities of government office is required. The written order should clearly define

- Period of the exemption
- Reason for exemption
- Number of NETC FASTags to be issued for exemption

*Note: All the involved documents must be maintained at the bank end and must be available for audit/verification. A NETC FASTag can be added/updated in exempted or invalid carriage status by specific authorized issuers only.*

#### 4.9.1 Reasons to remove NETC FASTags from exempted or invalid carriage exception type

A vehicle/NETC FASTag can be removed from exempted or invalid carriage exception type on issue of a written orders from appropriate authorities of government office. The written order should clearly define the reason for removing the NETC FASTags from exemption type.

Vehicle/NETC FASTag can also be removed from exempted or invalid carriage code if the exemption period is expired.

*Note: All the involved documents must be maintained at the banks end and must be available for audit/verification.*

#### 4.9.2 Exemption from Payment of fee on NH Plazas

Ministry of Road transport and Highways (MoRTH) Notification Dt. 3<sup>rd</sup> December 2010 GSR 950 (e) Rule 11 of National Highways Fee (Determination of rates and Collection) Amendment Rules 2010 Exemption from payment of Fee (1) No fee shall be levied and collected from a Mechanical Vehicle.

As per the guidelines issued by MoRTH, NHAI shall be nodal point to facilitate all matters relating to issuance of all exempted NETC FASTags.

Exempted NETC FASTAG shall be issued free of cost to the exempted categories of mechanical vehicles as per the National Highway Fee Rule 2008 & subsequent amendments.

a. Transporting and accompanying:

Vehicle Exempted: transporting and Accompanying: Below persons	Period of Exemption	Reason for Exemption	No. of NETC FASTags to be issued	Documentation to be collected by Issuer
President of India	1 Year or on expiry of contract agreement of hired vehicle.	As per GSR 950 (E) Dt. 3 <sup>rd</sup> Dec 2010  National Highways Fee (Determinati	As desired by the compet ent authorit y	1. Declaration of use of vehicle for official duties; by competent authority of the concerned department.  2.Registration Certificate of the Vehicle/s for which
Vice President of India				
Prime Minister of India				
Chief Justice of India				

Vehicle Exempted: transporting and Accompanying: Below persons	Period of Exemption	Reason for Exemption	No. of NETC FASTags to be issued	Documentation to be collected by Issuer
Governor of a State		on of Rates and Collection) Amendment Rules 2010		NETC FASTags are to be issued.  3.Copy of vendor agreement in case of hired vehicles.
Lt. Governor of a Union Territory				
Cabinet Ministers of the Union				
The Chief Minister				
The Judge of Supreme Court				
Chairman of the Legislative Council of state				
Secretary of the House of People				
Member of the Legislative Council of the state - within the state				
Speaker of a Legislative Assembly of the state				
The Chief Justice of High Court				
The judge of High Court				



Vehicle Exempted: transporting and Accompanying: Below persons	Period of Exemption	Reason for Exemption	No. of NETC FASTags to be issued	Documentation to becollected by Issuer
Ministers of State of the Union				
Foreign Dignitaries on State visit.				
The Chief of Staff holding the rank of full General or equivalent rank				
The Member of Parliament				
The Army Commander or Vice – Chief of Army Staff and equivalent in other services				
The Chief Secretary to a state government within concerned state				
The Secretary to the Government of India				
Secretary; Council of States				
Member of Legislative Assembly of the state - within the state				

Vehicle Exempted: transporting and Accompanying: Below persons	Period of Exemption	Reason for Exemption	No. of NETC FASTags to be issued	Documentation to be collected by Issuer
The Awardee of Param Vir Chakra, Ashok Chakra, Vir Chakra	1 Year or on expiry of contract agreement of hired vehicle.	As per GSR 950 (E) Dt. 3 <sup>rd</sup> Dec 2010  National Highways Fee (Determination of Rates and Collection) Amendment Rules 2010	As desired by the competent authority	On Production of photo identity card duly authenticated by competent authority for such award

b. Used for Official purpose by:

Vehicle Exempted: which is used for official purpose by	Period of Exemption	Reason for Exemption	No. of NETC FASTags to be issued	Documentation to be collected by Issuer
The Ministry of Defense including those which are eligible for exemption in accordance with the provisions of the Indian Toll (Army and Air force) Act 1901 and rules made thereafter, as extended to Navy also;	1 Year or on expiry of contract agreement of hired vehicle.	As per GSR 950 (E) Dt. 3 <sup>rd</sup> Dec 2010  National Highways Fee (Determination of Rates and Collection)	As desired by the competent authority	1. Declaration of use of vehicle for official duties; by competent authority of the concerned department.

The Central and State armed forces in uniform including para military forces and police;		Amendment Rules 2010		2. Registration Certificate of the Vehicle/s for which NETC FASTags are to be issued.
An executive Magistrate;				
A firefighting department of organization				
The National Highways Authority or any other organization or person using such vehicle for inspection, survey, construction or operations and maintenance thereof; and				3. Copy of vendor agreement in case of hired vehicles.

c. Used as Ambulance

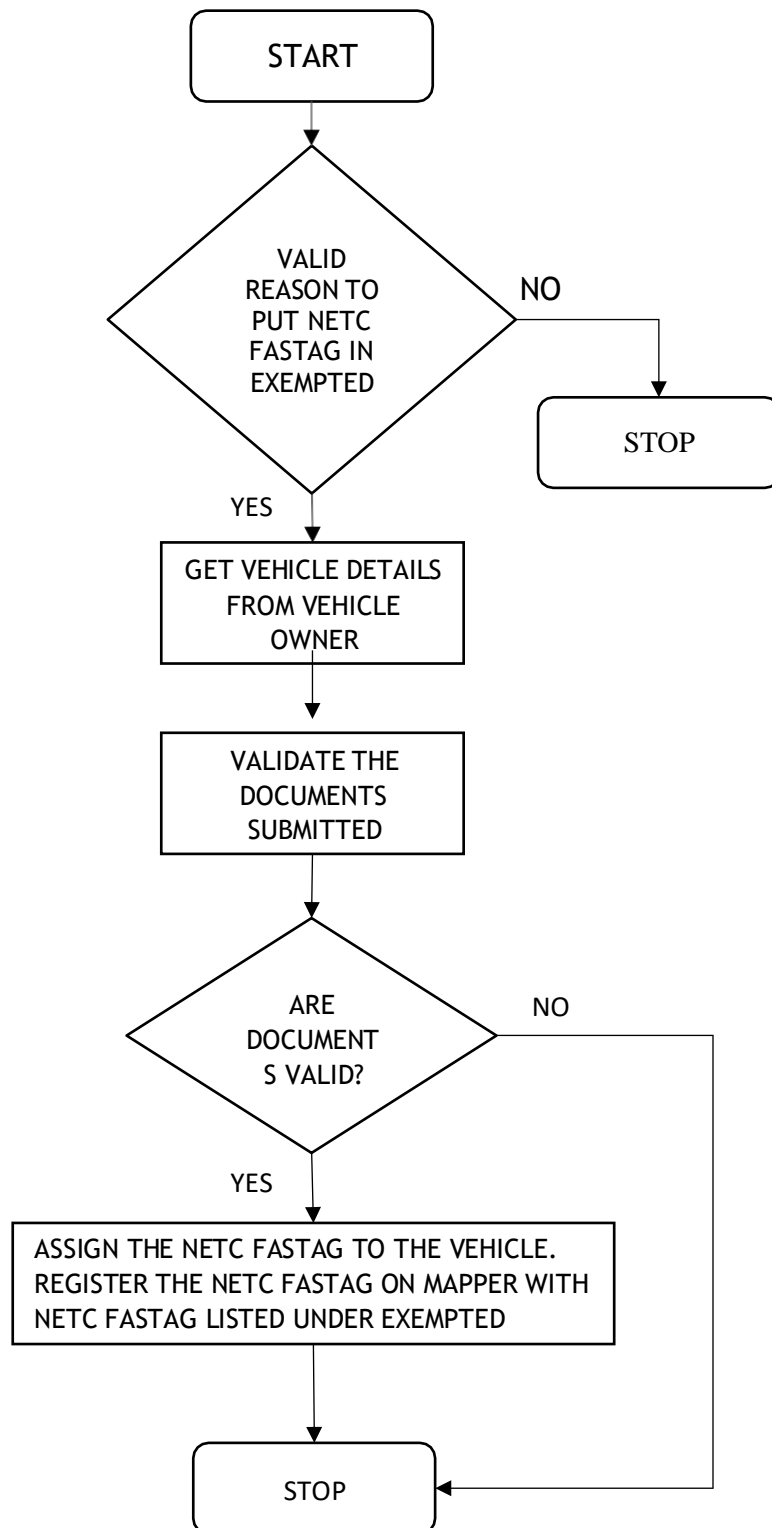
d. Used as funeral van

Note:

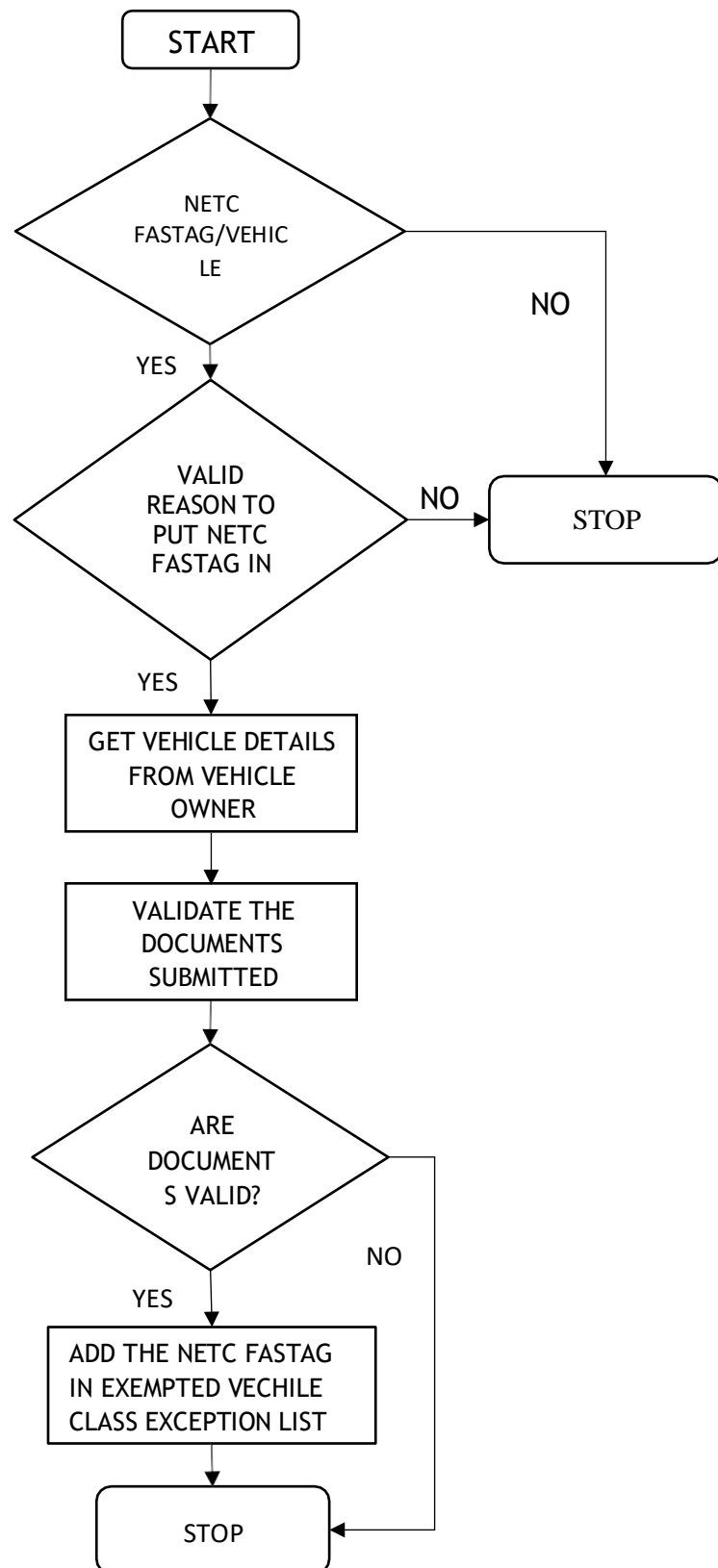
National Highways Fee (Determination of rates and Collection) Amendment Rules 2010 published by Ministry of Road transport and Highways Notification Dt. 3<sup>rd</sup> December 2010 GSR 950 (e) Rule 11 of National Highways Fee (Determination of rates and Collection) Amendment Rules 2010 Exemption from payment of Fee has been used as the base for covering the global discount as this is the most recent rule in vogue for exemption of user fee and is applicable for all public funded projects. However, various Concession Agreements between NHAI and Concessioners have various other exemptions. Exemptions as per various Concession Agreement will have to be configured by the acquirer based on the location and privileges.

NHAI should inform the concerned person/ department regarding the document required for seeking NETC FASTag under exempted category, asking them to approach the issuer for issuance of NETC FASTags.

Flowchart: Register vehicle with NETC FASTag in exempted or invalid carriage exception type



Flowchart: Add registered NETC FASTag in exempted or invalid carriage exception type



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## Section 5: Operating procedure for Members

### Section covers:

- **NETC availability**
- **Operating procedure**
- **Types of transactions covered and process flow**
- **AML/KYC compliance**
- **Intellectual property rights**
- **Non-Disclosure Agreement**
- **Cessation/Termination/Suspension of service**
- **Marketing & Branding**

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## 5.0 Operating Procedure for Members

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### 5.1 NETC system availability

Members are allowed to connect to NPCI directly through leased line or through an ASP. The ASP will be connected to NPCINet and Member will be connected to NPCI via the ASP hosted switch. Sub-Members are allowed to connect directly or through a Sponsor Bank or an ASP. NETC system would be operational and available to all Members round-the-clock with 99.95% uptime, excluding periodic maintenance with prior notice and force majeure events such as war and natural calamities. Periodic maintenance of the NETC System would be notified to all Members 36 hours in advance unless an emergency or unscheduled maintenance activity. The NETC Service is provided on an 'as is' basis, without any express or implied warranties in respect thereof. Under no circumstances shall NPCI be liable for any damages whatsoever, whether such damages are direct, indirect, incidental, consequential and irrespective of whether any claim is based on loss of revenue, interruption of business or any loss of any character or nature whatsoever and whether sustained by the Member or by any other person, as a result of the NETC Services.

### 5.2 Operating procedure

- Operating hours: Members participating in NETC network should maintain round-the-clock connectivity of their network for the NETC services with an uptime of 99.95% of their Host systems.
- Accuracy of input Data: Members should ensure that their host generates accurate input data in sync with reference to the NETC System interface specification for NETC transaction.
- Security of transactions: The transaction messages/files between the Plaza server and the Acquirer host should be transmitted through a secured channel.
- Data-retention and storage: All payment system related data including but not limited to vehicle images shall be preserved by the respective Members as per the preservation period applicable to the payment systems which is 10 years.
- NPCI will ensure that each Member receives transaction and settlement reports. However, Members should keep their books of accounts reconciled on a daily basis.
- Each Member should conduct internal audits and audit of its processing agent, if any, to comply with the NETC PG at least once a year.
- If any Member fails to fulfill its commitment towards other Members participating in the NETC Network, thus, causing any loss in the form of settlement or transaction fees, the defaulting Member would bear such losses completely. In such cases, funds available in the defaulting Member's settlement account will be used to settle claims at the earliest.
- Members are required to ensure to provide a round-the-clock help desk service.
- Members are required to ensure all the accounts should be reconciled on daily basis.
- Members are required to have a separate operations team to handle inter Member/user's complaints.
- Members should have primary infrastructure, back up/high availability, and disaster recovery (DR). DR should be placed in a different location.

- Further, Members should have robust infrastructure in terms of application, network and hardware capabilities to perform NETC transactions in a secure and a desired manner. Robust infrastructure refers to scalable hardware, applications and network backup links to handle desired transaction volumes seamlessly.

### 5.3 Types of transactions covered and process flow

There are two types of transaction processing:

#### 1. Online Transaction Processing

NETC System consist of NETC Mapper and NETC Online Switch. NETC Mapper is a repository of Vehicle Information, Vehicle Owner Information, NETC FASTag Details, Bank Information and Exception List. While NETC Switch is used for switching the NETC transactions to the Members.

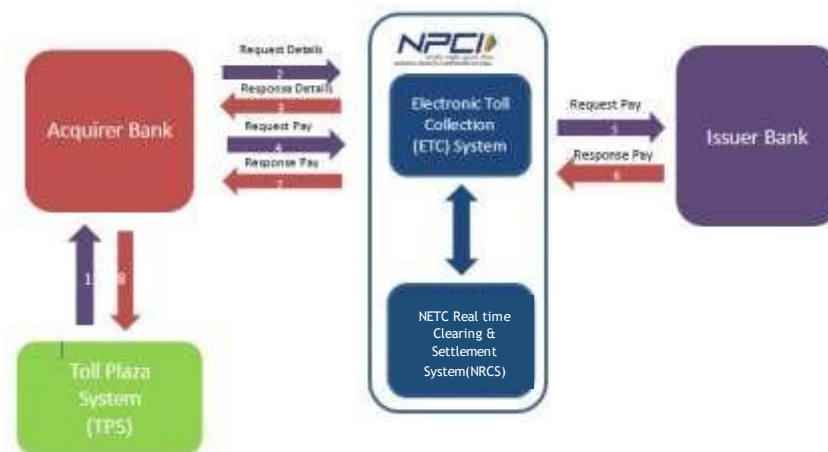


Figure 5 - Online Transaction Processing Flow

The Members host systems (issuing & acquirer) communicates with NETC System, via the XML Message formats, using available Application Programming Interface (API).

All APIs are exposed as stateless service over HTTPS. Usage of open data format in XML and widely used protocol such as HTTP allows easy adoption by the Members.

API input data should be sent to the following URL as XML document using Content-Type "application/xml" or "text/xml".

Refer to the NETC Systems '**NETC API Technology Specification**' document for the APIs and XML message formats.

#### 2. Offline Transaction Processing

All the offline transactions will be processed through the NRCS system. Refer to the NETC Real-time Clearing & Settlement system (NRCS) section for offline transaction processing.



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## **5.4 Business Continuity Process (BCP):**

BCP is a process whereby businesses ensure the recovery of critical business operations, including services to users when confronted with adverse events such as natural disaster, technological failure, human error, or other unplanned incidents.

NPCI has an Enterprise Business Continuity Plan v1.6. Additionally, each Business function has their corresponding FRP (Functional Recovery Plan). Each Business Application running Active-Active will run on Single site once every six months and Applications running Active-Passive will undergo IT-DR drill every quarter (Switchover from Operational site to Failover/ Alternate site).

NPCI has a well-established Business Continuity Management Framework. NPCI is an ISO 22301 certified enterprise with its Code of Conduct (COC) in good standing till 29-Oct-2022. The last Re-certification audit was performed in February - 2020 and the annual Surveillance audit was performed in December - 2020 confirming NPCI's adherence to the standard.

## **5.5 AML/KYC Compliance**

All NETC Members should comply with proper Anti-Money Laundering (AML) and Combating the Financing of Terrorism (CFT) – ML/TF & Sanctions compliance/ KYC checks as stipulated by RBI and other regulatory bodies, regulating the activities of the Members before registering a user for NETC. Members will have to submit to NPCI, a duly signed declaration in this respect in the form given in ANNEXURE VI.

### **I. General:**

Member in the NPCI network play an important role in combating money laundering, terrorist financing (ML/TF), and ensuring that Sanctioned/ Prohibited/ Specially Designated Nationals and Blocked Persons as per sanction/ cautious list circulated by local and international regulators/ law enforcement agencies, etc. do not have access to the payment network consistent with Requirements of Law.

### **II. Policy:**

All the Members must develop adequate policies, procedures, systems, and controls to prevent the activity of money laundering as per the guidelines laid down by NPCI.

Members shall not engage in any type of business or relationship with any Person/ Entity involved in criminal activity, whose money is derived from criminal activity, or who intends to finance terrorist activities in any way. Further, Members shall not do business with any Person/ Entity subject to sanctions under Requirements of Law. Members must implement and maintain appropriate internal controls to prevent sanctioned or prohibited Persons from accessing the network and to detect and prevent the use of the network for ML/TF in accordance with Requirements of Law.

Members must provide sufficient resources (including staffing, employee expertise, and financial resources) and up-to-date technology to support effective controls comprising its ML/TF program. Member's ML/TF and sanctions programs must be reasonably designed to prevent the Members and NPCI network from being used to facilitate ML/TF.

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Member's ML/TF programs shall adhere to all Requirements of Law, and include, at minimum, the elements enumerated in this Section. Additionally, Member is responsible for enforcing these requirements against Third Party Partners and ensure that each Third Party Partner has an ML/TF program that adheres to Requirements of Law. Member's AML programs must include the following elements:

A: AML Standards On On-boarding of participating Members & extending NPCI services / offering:

The Financial Action Task Force (FATF) is an inter-governmental body established in 1989 by the Ministers of its Member jurisdictions. The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system. FATF has stated that countries or financial institutions should identify, assess and analyse the money laundering and terrorist financing risk they face.

NPCI recommends the Members to undertake the broad scope for on-boarding its Members:

i) User Acceptance Policy -

The availability of user information is a critical element in the effective management of Money Laundering (ML) risks. The AML policy as well as the KYC/AML procedures to cover the aspects of user identification/verification, the due diligence procedures to be adopted and in general the overall policy in regard to acceptance of users or establishing a relationship.

ii) User Identification Policy -

The collection of KYC documents by the Members as defined in their approved policy & adequate measures to ensure name screening Office of Foreign Assets Control (OFAC)/ Sanction screening/ Politically Exposed Persons (PEP) & adverse media checks are conducted on the clients/user's.

iii) Ongoing Screening:

Member's shall implement routine monitoring to ensure that verification of identification principles is maintained and any material changes to user identification recorded, including regular screening of all Members, agents, and clients against criteria and watch lists issued by OFAC/ United Nations Security Council (UNSC) and other international/ local regulators.

The Member is instrumental in ensuring that prohibited individuals and entities do not have access to the payment network consistent with Requirements of Law. Member shall adopt and implement a ML/TF program reasonably designed to comply with the Program Documents and Requirements of Law, including RBI KYC Master Direction, PMLA Act 2002, UNSC, OFAC, HM Treasury and other local and international regulators.

B: Risk Assessment:

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Each Members must conduct a comprehensive assessment of sanctions and ML/TF risks posed by its business activities to ensure it has effective risk mitigation policies and procedures in place. Such risk assessment must identify and analyze data related to any risk categories relevant to the Members, including products, services, users, entities, transactions, and geographic locations. The risk assessment must be written, easily understood, comprehensive, and shared with appropriate business line employees and senior management.

Member's compliance program must adequately address its risk profile as identified by the Member's risk assessment.

Member's shall periodically re-assess risk to identify changes in risk profile, including changes associated with new products, services, users, and geographies. In the absence of any changes, Members must conduct a new risk assessment annually.

#### C. Internal controls:

Members shall implement and maintain a system of internal controls to prevent or detect the use of the NPCI network for ML/TF and to ensure ongoing compliance with Requirements of Law.

Each Member's ML/TF program shall include written policies, procedures, and processes approved by Board/ equivalent senior management. The ML/TF program shall be commensurate with the size, structure, risks, and complexity of Member's business. The ML/TF program must be sufficiently documented to ensure program continuity, despite changes in management or staffing. The ML/TF program must meet all Requirements of Law, including those related to record keeping and reporting requirements, and must include policies and procedures to monitor and identify suspicious activity and take appropriate action in a timely manner.

Each Member must conduct periodic independent assessment & evaluation of its ML/TF program by an internal audit department, outside auditors, consultants, or other qualified independent parties. Such independent assessment shall be conducted at a frequency commensurate with the Member's risk, or at least annually.

The assessment shall evaluate the overall adequacy and effectiveness of the ML/TF program, including policies, procedures, and processes, and must include the following activities:

1. Review Member's business activities for compliance with Requirements of Law
2. Evaluate Member's risk assessment for reasonableness, including its analysis and results, given the Member's risk profile
3. Conduct appropriate risk-based Transaction testing to ensure adherence to recordkeeping and reporting mandated by Requirements of Law
4. Evaluate staff training policies and records for adequacy, accuracy, and completeness

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The assessment shall document the scope of any review and results in writing, and must be provided directly to senior management in a reasonable amount of time following conclusion of the evaluation. The report must identify any findings, deficiencies, policy and procedure violations or exceptions, and any areas where there is a need for ML/TF program enhancements or stronger controls.

#### D. Activity Monitoring and Reporting -

Member must develop and implement comprehensive policies and procedures to monitor client's profiles and their associated transaction activity. Such monitoring may provide early warning of/ or detect potential money laundering events. Such policies and procedures should leverage existing suspicious activity early warning tools and techniques and should include but are not restricted to the following high-risk indicators:

- a. Cross-border Transaction activity directly linked to high Transaction volume and high risk Transactions
- b. Specific high risk charge type activity
- c. Client activity that is not commensurate with the profile/ model

Member must investigate instances of unusual or suspicious activity to ensure there are no reputation risks associated with the client or that the client's Members are engaged in activities that may be indicative of potential ML/TF or other activities that violate Requirements of Law. In accordance with Requirements of Law applicable in the Territory set forth, Member/ Member partner as reporting entity must take reasonable steps to report such instances as necessary and maintain appropriate records.

#### E. ML/TF Compliance Officer:

Member must designate a qualified ML/TF program Compliance Officer responsible for implementing an effective ML/TF program and ensuring adherence to Requirements of Law. The ML/TF program Compliance Officer must have sufficient authority and resources to administer an effective ML/TF program, be fully knowledgeable of Requirements of Law, understand the Member's products, services, users, Third Party Partners, and geographic locations and any associated risk, and provide direct lines of communication with senior management to ensure transparency and sufficient supervision of the ML/TF program.

#### F. Training:

Each Member must conduct training programs for new employees at the time of employment and for all employees at least on an annual basis thereafter to ensure employees' understanding and compliance with the ML/TF program and Requirements of Law.

#### G. Third party partners:

Each Member must monitor and collect sufficient information from Third Party Partners to identify and implement controls to mitigate potential risks. Each Member must begin the due diligence process at the beginning of the business relationship. Each Member shall have

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procedures in place to collect and verify the identity of Third Party Partners and collect sufficient background information to identify potential risks. Member's procedures must also provide for ongoing due diligence and routine risk-based monitoring whereby Member collects and records any material changes to Third Party Partners' user/ client identification information.

Viz., inclusive of the following but not limited to, Issuer / Acquirer / International service establishment agreements / Payment facilitator / External service provider / Technology platforms, etc.

PPIs shall ensure compliance with all the necessary Risk and Compliance Framework/ Guidelines that are released by NPCI from time to time

## 5. Fraud Risk

- Member are recommended to implement ongoing monitoring of transaction to identify deviant behavior/ trend/ abnormal pattern which could help in detecting any unusual activity. Members should also investigate such alerts & report confirmed fraud transaction with NPCI.
- Member are also recommended to review and report any frauds related to fake websites selling RFID to their users, or websites impersonating themselves of selling RFID and cheating user by either charging exponential amount to user for issuing RFID or collecting amount for issuing RFID and not providing services.
- The brand/ logo and usage of the terms of the product (NETC FASTag/ NETC) to be verified by the acquiring Member and adequate due diligence to be conducted to ensure controls at the time of boarding and on an ongoing manner.

### 5.6 Intellectual Property Rights

NPCI solely will own, hold, possess, and acquire the intellectual property rights to all these documents prepared for the NETC Services.

### 5.7 Non-Disclosure Agreement (NDA)

All Members participating in the NETC network are required to sign NDA with NPCI as given in [ANNEXURE V](#). Each Member should treat NETC related documents strictly confidential and should not disclose to alien parties without prior written permission from NPCI. Failing to comply with this requirement would invite severe penalties. However, the participating Members can disclose the NETC PG and other supporting documents to its employees or agents, but only the parts that are related to their specific areas of their respective operations strictly on need to know basis.

### 5.7 Cessation/ Termination/ Suspension of Service

NETC Member would cease to be a Member in any of the following events shown in the figure below:

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## Events when a Member ceases to be a Member

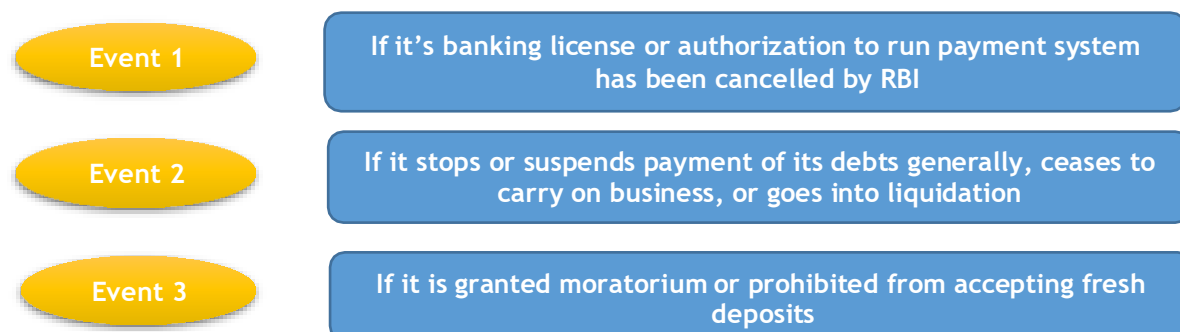


Figure 8 - Termination of Services

NPCI may terminate/ suspend the NETC Membership under any one or more of the following circumstances:

- The Member has failed to comply with or violated any of the provisions of the NETC PG as amended from time-to-time, or Member commits a material breach of NETC PG, which remains un-remedied for thirty days after giving notice.
- The current account with RBI of the Member is closed or frozen.
- The Member is amalgamated or merged with another Member.
- Steps have been initiated for winding up the business of the Member.
- Suspension or cancellation of RTGS Membership.
- NPCI shall have the right to take appropriate action as deemed fit by NPCI, including but not limited to suspension/termination of membership, in the event NPCI observes disproportionate increase in fraud transactions, technical declines, business declines, downtimes and other such critical operational metrics with respect to the transactions processed by or through the member or third parties engaged by the member when compared against industry averages/best practice benchmark standards followed in the payments ecosystem with respect to such critical operational metrics.

In case the issuer voluntarily opts out of the Membership, Issuer needs to ensure that all the NETC FASTag linked accounts are reconciled and closed.

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After the withdrawal of NETC Membership the Member must support all the relevant dispute processing till the end of transaction life cycle.

#### Process of Termination/ Suspension of NETC Membership

- NPCI should inform the Member in writing regarding termination/ suspension of its Membership from the NETC System.
- If NPCI is of the opinion that the non-compliance/ violation is not curable, NPCI may suspend/ terminate the NETC System with immediate effect. However, the Member would be given an opportunity to post decisional hearing within thirty days and will be communicated the order confirming or revoking the termination/ suspension passed earlier.
- NPCI may at any time, if it is satisfied, either on its own motion or on the representation of the Member that the order of suspension/ termination of Membership may be revoked, may pass the order accordingly.
- If the non-compliance/ violation is capable of remedy but cannot be reasonably cured within thirty days, the termination/ suspension will not be effective if the Member in default commences cure of the breach within thirty days and thereafter, diligently peruses such cure to the completion within sixty days of such notice of violation.
- On revocation of termination of Membership order the entity should be entitled to apply for Membership afresh in accordance with NETC Procedural Guidelines. However, no automatic restoration of Membership to NETC will be granted by NPCI.

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## **5.8 Marketing & Branding**

NPCI operates the NETC Payment System. NETC Marks includes the NPCI Logo, Brand Name, Slogan and other ancillary marks. The Member shall accept NPCI's ownership of NETC marks. The Member agrees that it will not object or challenge or do anything adverse, either legally or publicly against the NETC marks. The Member will not modify, adopt, register or attempt to modify, adopt or register, any names, trademarks, service marks, trade names, logos, or any word or symbol that is remotely similar to or bears any resemblance to NPCI marks, as a part of the Member's trade name, company name, product names, marks, copyright or otherwise.

All the participants of NETC payment network must take prior approval from NPCI for printing the NPCI/IHMCL/NHAI logos.

All the participants of NETC payment network must follow the NETC Brand Guidelines Circular. The same is available on NPCI website under NETC FASTag.

NPCI mandates Issuer to print the NETC FASTag logo on the NETC FASTag. NETC FASTag structure must contain:

- NETC FASTag logo,
- IHMCL/NHAI(MoRTH)/NPCI logo
- Issuer logo
- Toll Free Helpdesk number of the Issuer
- NETC FASTag ID encoded in the barcode or QR code

In addition to the above the issuer should also provide the welcome kit consisting of pictorial procedure for affixing the NETC FASTag onto the vehicle.

## **5.9 Process of Blacklisting NETC FASTags**

### **5.9.1 Reasons for adding NETC FASTags in blacklist**

- A vehicle can be blacklisted from passing through NETC lane on written orders from appropriate authorities of government agencies as listed below:



- 
- Reserve Bank of India
  - NHAI/ IHMCL
  - Centre/ State law enforcement agency
  - Police
  - Defence
- NETC FASTag of a stolen vehicle can be blacklisted if a copy of FIR is available

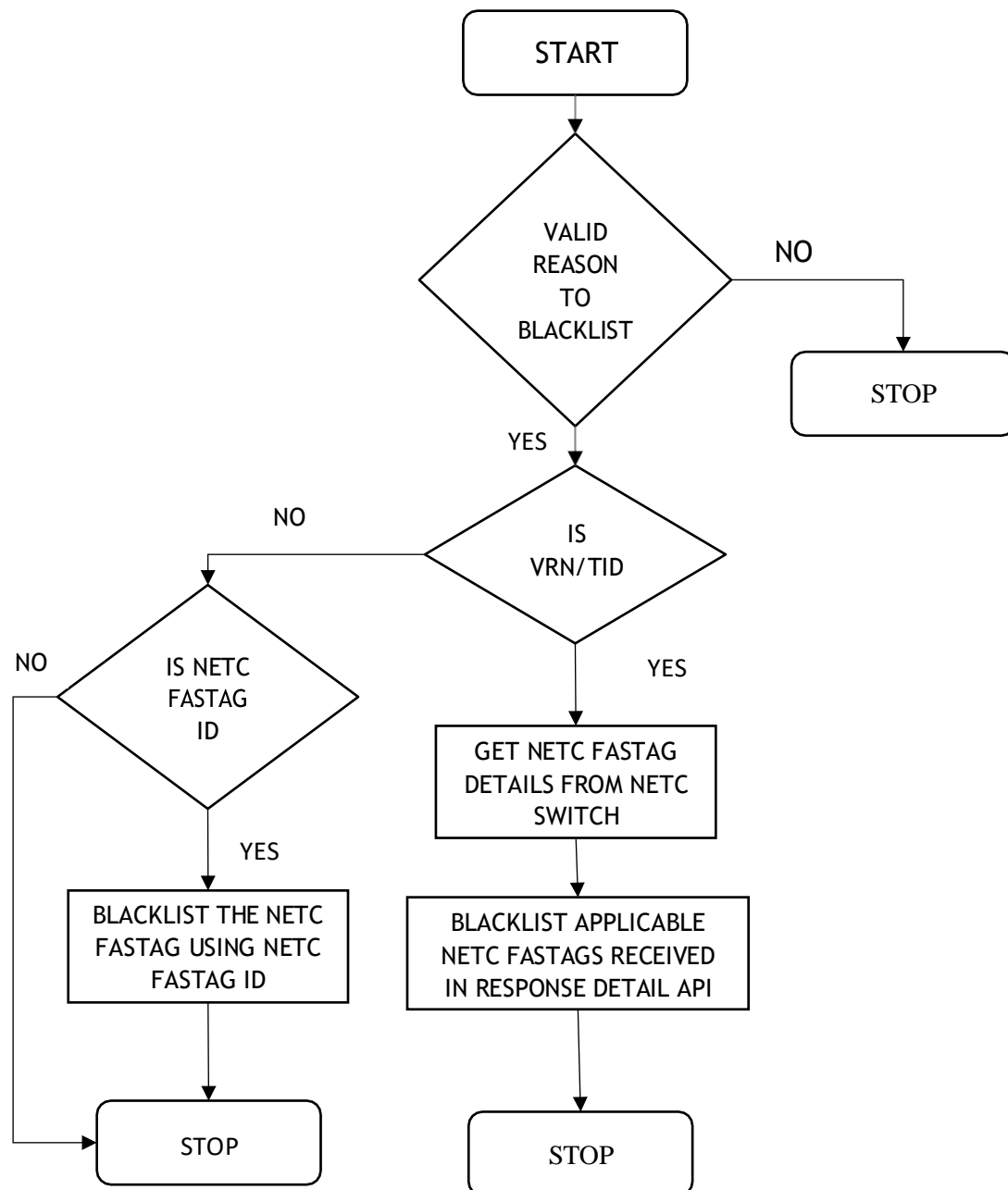
*Note: All the required documents must be maintained at the banks end and must be available for audit/ verification.*

#### **5.9.2 Reasons for removing the NETC FASTags from blacklist**

- Written approval to remove the NETC FASTag from the authority which had requested to add the same NETC FASTag in blacklist

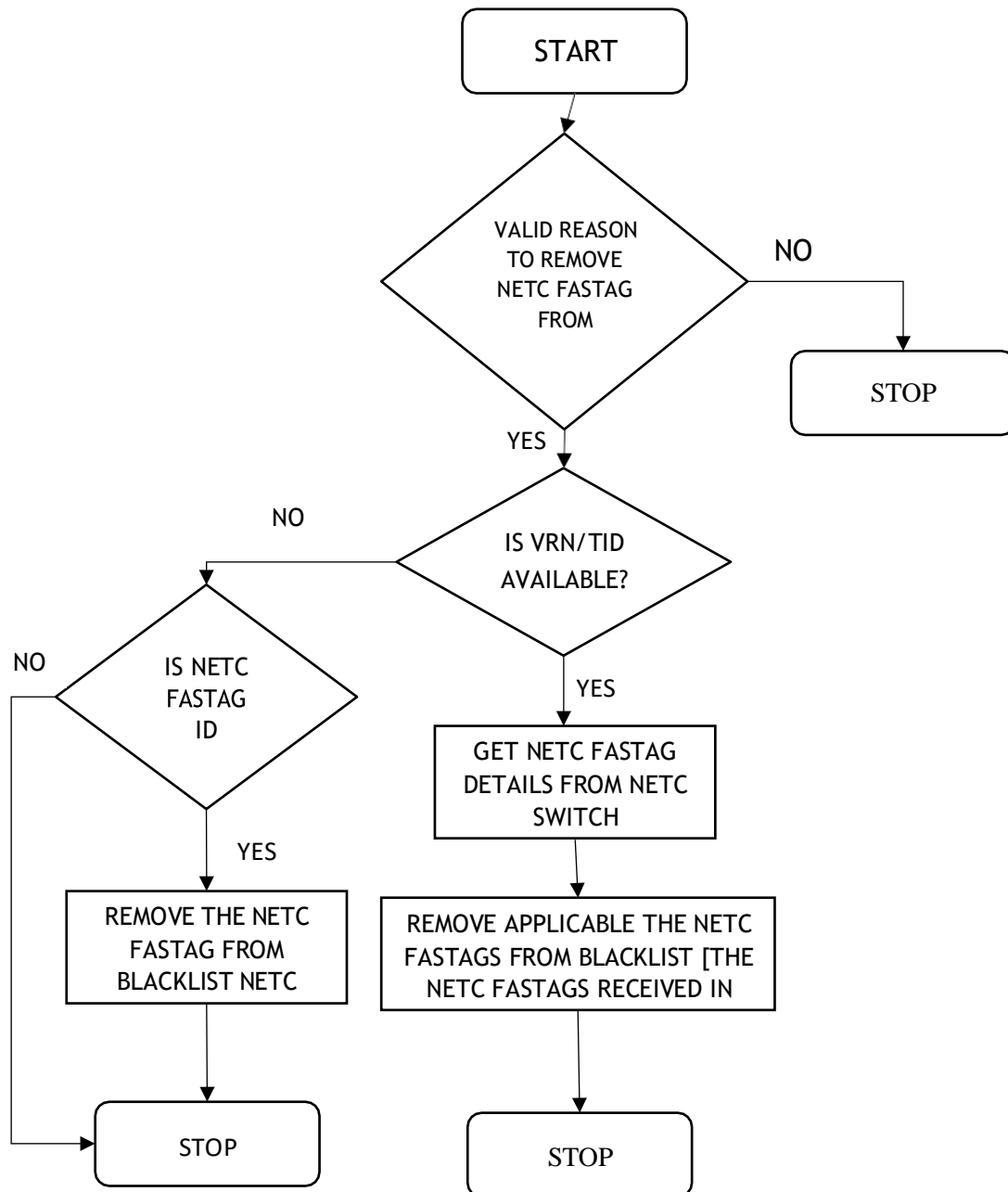
*Note: All the NETC FASTags added in blacklist for a vehicle must be removed if request is to remove the vehicle from blacklist. Only the bank which has added the NETC FASTag in blacklist can remove the NETC FASTag from blacklist.*

Flowchart: Adding NETC FASTag in Blacklist



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Flowchart: Removing NETC FASTag in Blacklist



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### **5.10 Monthly Pass Portal**

Users of NETC ecosystem will be provided with a monthly pass portal through which the users can apply for the 'Pass' to be used at any specific Toll Plaza. The user will follow the below procedure:

1. The user to visit the NHAI/ IHMCL Monthly pass portal.
2. Select the required Toll Plaza
3. Input the VRN for which the Monthly pass is to be issued
4. Select the NETC FASTag ID
5. Select the required Pass
6. User to make payment

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## Section 6: NETC Realtime Clearing and Settlement

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### **Section covers:**

- **Request NETC FASTag Details**
- **Online Transaction Processing**
- **Clearing & Settlement**
- **Clearing & Settlement Cycle**
- **Calculating Net Position**
- **Net Settlement Activity Reports**
- **Reconciliations**
- **Adjustment to Settlement**
- **Settlement between NPCI and NHAI/IHMCL**

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## 6.0 NETC Real-time Clearing and Settlement System (NRCS)

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NPCI clears the NETC transactions through NETC Real-time Clearing and Settlement System (NRCS) designed to process, Resolution Process for the transactions processed through NRCS.

The Technical specification related to NRCS are covered under “NRCS Technical Specification Document” & this document is shared with all Members at the time of initial certification & onboarding process.

### 6.1 Request NETC FASTag Details

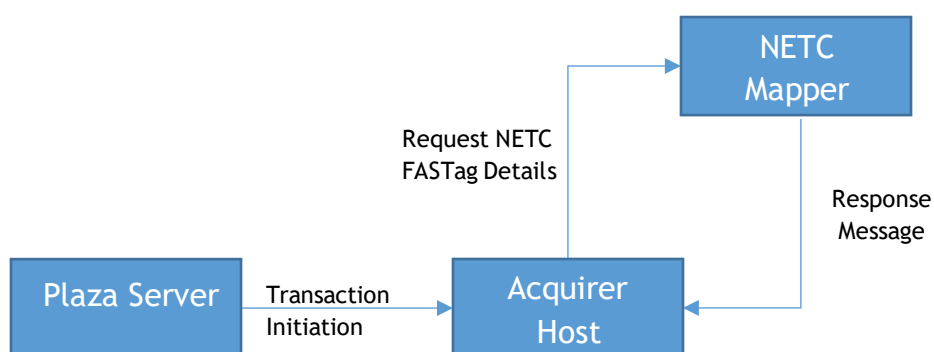


Figure 9 - NETC FASTag Validation

Transaction is initiated by Toll Plaza server (TPS) and sent to the acquirer host for further processing. Acquirer host sends request message to the NETC mapper for NETC FASTag details.

### 6.2 Online Transaction Processing

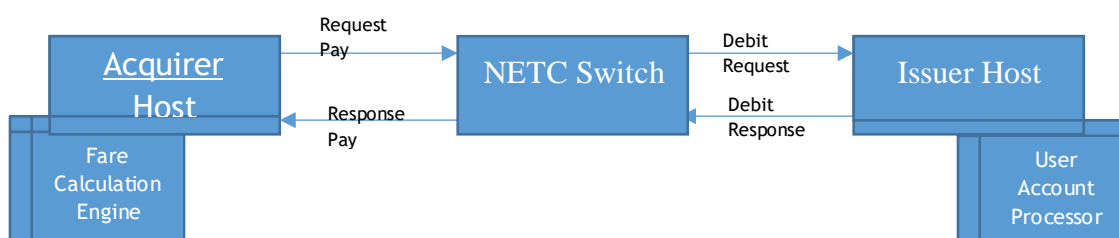


Figure 10 - Online Transaction Processing

Post receiving the NETC FASTag details response from the NETC mapper, acquirer host calculates the toll fare and sends a debit request to issuing host through NPCI’s NETC switch. Issuer host debits the NETC FASTag holder’s account and sends a response back to the acquirer host through NPCI’s NETC switch. On receipt of the response message, the Acquirer host completes the transaction processing.

All transaction which are processed by the NETC system to the issuer will be considered as successful transactions for the clearing and settlement in subsequent settlement cycle. The Issuer must honour all such transactions irrespective of whether Issuer is able to debit the NETC FASTag holder's account.

### 6.3 Clearing & Settlement

In NETC system, there is no need for the acquirer to present a separate clearing file post online transaction processing. Each processed transaction is considered directly for settlement by the NRCS system.

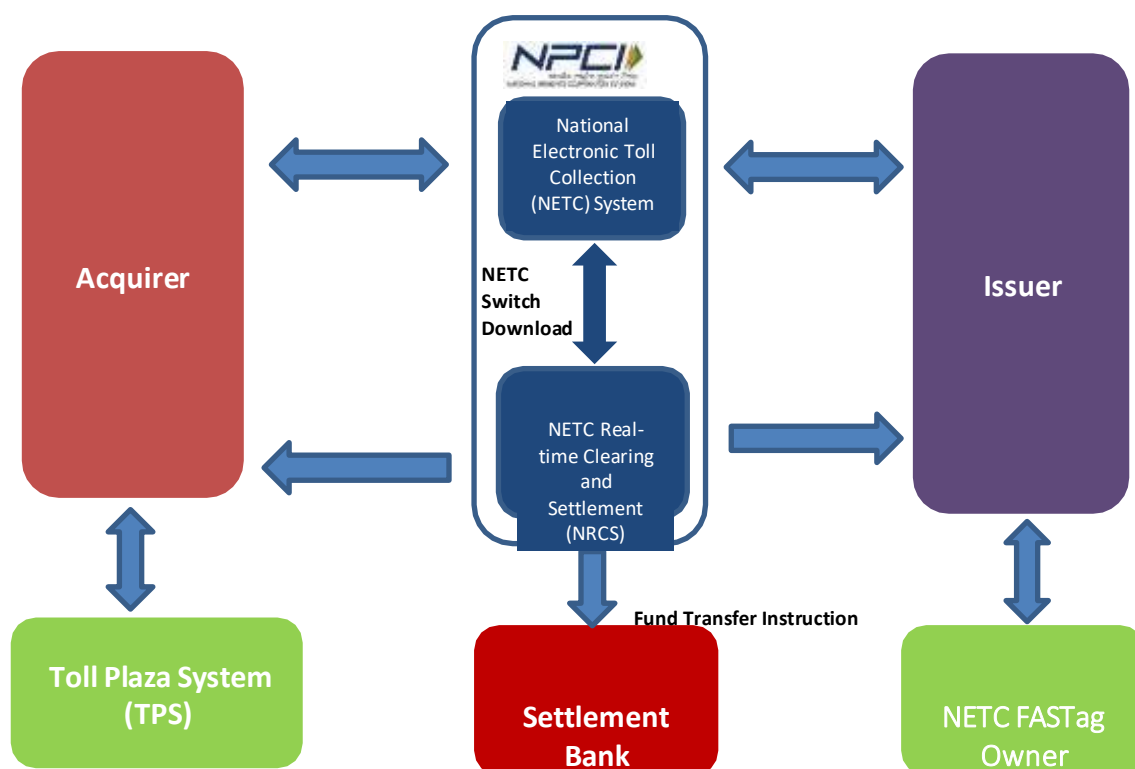


Figure 11- Clearing & Settlement

From the above processing workflow, it can be seen that all the transactions received on NETC switch from the acquirer host are downloaded onto the NRCS system, which further processes the data to arrive on the net settlement amount for each Member (Issuer/ Acquirer). NPCI and Members exchange funds to complete settlement for clearing and billing activities. The settlement service is the facility within which funds are exchanged between issuers, acquirers and NPCI to settle transaction and fee amount. The net settlement information is sent to the settlement bank which performs the physical transfers of funds. NRCS system provides response files to the Members (Issuers and Acquirers) which clearly indicate the transactions that have been processed to arrive at the net settlement amount.

## 6.4 Clearing and Settlement Cycle

NETC Settlement Cycle					
First Settlement		Second Settlement		Third Settlement	
Transaction Day & Time	Settlement Day & Time	Transaction Day & Time	Settlement Day & Time	Transaction Day & Time	Settlement Day & Time
Monday (16:00:00 - 23:59:59)	Tuesday (10:30)	Tuesday (00:00:00 - 07:59:59)	Tuesday (12:30)	Tuesday (08:00:00 - 15:59:59)	Tuesday (18:30)
Tuesday (16:00:00 - 23:59:59)	Wednesday (10:30)	Wednesday (00:00:00 - 07:59:59)	Wednesday (12:30)	Wednesday (08:00:00 - 15:59:59)	Wednesday (18:30)
Wednesday (16:00:00 - 23:59:59)	Thursday (10:30)	Thursday (00:00:00 - 07:59:59)	Thursday (12:30)	Thursday (08:00:00 - 15:59:59)	Thursday (18:30)
Thursday (16:00:00 - 23:59:59)	Friday (10:30)	Friday (00:00:00 - 07:59:59)	Friday (12:30)	Friday (08:00:00 - 15:59:59)	Friday (18:30)
Friday (16:00:00 - 23:59:59)	Saturday (10:30)	Saturday (00:00:00 - 07:59:59)	Saturday (12:30)	Saturday (08:00:00 - 15:59:59)	Saturday (18:30)
Saturday (16:00:00 - 23:59:59)	Sunday (10:30)	Sunday (00:00:00 - 07:59:59)	Sunday (12:30)	Sunday (08:00:00 - 15:59:59)	Sunday (18:30)
Sunday (16:00:00 - 23:59:59)	Monday (10:30)	Monday (00:00:00 - 07:59:59)	Monday (12:30)	Monday (08:00:00 - 15:59:59)	Monday (18:30)



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The above table explains the multiple clearing and settlement cycles.

1. There will be three NETC switch cut-over in a day as mentioned in the above table. NPCI may increase the settlement cycles basis the increasing volumes. NPCI will communicate about incremental settlement cycle through separate circular to Members.
2. Settlement fund of Three settlement cycles will be paid to the acquirer on the same day.

**Settlement for NETC shall be processed through RTGS on all 365 days except specified holidays as and when decided by RBI.**

### **6.5 Transaction Lifecycle**

A transaction lifecycle may consist of multiple stages; however, each transaction does not need to pass through every stage of the lifecycle stated below. Supporting documents to be provided by the Members as applicable.

The various types of messages supported by NPCI NRCS System are as follows:

- 1) Credit adjustment: These messages are generated by the acquirer to settle the credit amount to the issuer for NETC Toll transactions. Credit adjustment will be done by the acquirer.
- 2) Debit adjustment: These messages are generated by the acquirer to settle the debit amount to issuer for NETC Toll transactions.
- 3) Chargeback Raise (Debit): It is a message through which the issuer demands a full or partial reversal of an amount earlier charged to a NETC FASTag holder's account. A chargeback is always accompanied by a reason due to which it is being demanded.
- 4) Chargeback acceptance (Debit): It is a notification message generated by the acquirer to indicate an acceptance of the chargeback raised by the issuer.
- 5) Credit Chargeback: It is a message through which the issuer remits full or partial amount excess credited by the Acquirer. Credit chargeback will be done by the issuer.
- 6) Credit Chargeback acceptance: It is a notification message generated by the acquirer to indicate an acceptance of the credit chargeback raised by the issuer.
- 7) Re-Presentment: It is a message by which the acquirer presents the transaction again to the issuer either to correct a defect in the chargeback or to indicate disagreement with the chargeback raised by the issuer.
- 8) Re-Presentment acceptance: It is a notification message initiated by the issuer to indicate acceptance of the re-presentment message transmitted by the acquirer.
- 9) Pre-Arbitration: This message is generated by the issuer if its chargeback is refused by the acquirer, and the issuer wants to raise a pre-arbitration case in response.
- 10) Pre-Arbitration acceptance: This message is generated by the acquirer to indicate an acceptance of the pre-Arbitration raised by the issuer.
- 11) Pre-Arbitration declined: This message is generated by the acquirer to decline/reject the pre-arbitration raised by the issuer.

- 
- 12) Arbitration: This message is generated by the issuer to indicate a filing of arbitration case with NPCI. It is generated only if the Issuer previously raised pre-arbitration is refused by the acquirer, but the issuer wishes to continue the dispute cycle.
  - 13) Arbitration withdrawn: Issuer bank may withdraw the arbitration request if issuer does not wish to continue with the Arbitration.
  - 14) Arbitration acceptance: This message is generated by the acquirer to indicate an acceptance of the arbitration raised by the issuer. This means that the acquirer agrees to the conditions raised in the arbitration and accepts the demands of the issuer.
  - 15) Arbitration continuation: This message is generated by the acquirer to indicate its rejection of the arbitration raised by the issuer. After generation of the arbitration continuation message by the acquirer, NPCI decides the case and gives a final verdict on it through arbitration verdict.
  - 16) Arbitration withdrawn: Issuer can withdraw an arbitration raised earlier through this message.
  - 17) NRP: if Acquirer & issuer bank are unable to resolve the dispute among themselves, the arbitration may be continued to NRP (NPCI Review Panel) stage. In NRP stage, NPCI review panel, shall review the arbitration basis the submitted evidence during the dispute life cycle and pass verdict. NRP process and related charges are explained in detail in Annexure - IX
  - 18) PRD: If NRP losing party is not satisfied with the verdict, they may raise the dispute for review with Panel for dispute resolution (PRD). PRD will review the case, basis the submitted evidence during the dispute life cycle and accordingly pass verdict.
  - 19) Appellate authority: If PRD losing party is still not satisfied with the verdict received during the PRD Stage, then they may approach the appellate authority for resolution.
  - 20) Arbitration continuation: This message is generated by the acquirer to indicate its rejection of the arbitration raised by the issuer. After generation of the arbitration continuation message by the acquirer, NPCI decides the case and gives a final verdict on it through arbitration verdict.
  - 21) Arbitration withdrawn: Issuer can withdraw an arbitration raised earlier through this message.
  - 22) Arbitration verdict: NPCI generates and forwards this message to the Members to indicate its verdict on arbitration.
  - 23) Good faith: This message is generated when a good faith case is filed by a Member.
  - 24) Good faith acceptance: This message is generated by a Member to indicate its acceptance of a good faith case raised by another Member. Good faith acceptance can be full/ partial.
  - 25) Good faith declined: This message is generated by a Member to indicate that it rejects the good faith case concerning it raised by another Member.

Life Cycle Stage	Initiating Member	Pre-requisite	Description	TATs [in calendar days]	Transfer of Fund
Settled Transaction	NPCI	Online Transaction Processing	Online processed transactions are downloaded from the NETC switch onto the NRCS system and settled with the Members.	Transaction or Transaction + 1 day	Applicable [Issuer receives the Debit and Acquirer receives Credit]
Credit Adjustment	Acquirer	Settled Transaction	These messages are generated by acquirer to settle the credit amount to the issuer for NETC Toll transactions.	Within 30 days for Settled Transaction	Applicable [Acquirer receives the Debit and Issuing Bank receives Credit]
Debit Adjustment	Acquirer	Settled Transaction	These messages are generated by the acquirer to settle the debit amount to issuer for NETC Toll transactions.	Within 5 days for Settled Transaction	Applicable [Issuer receives the Debit and Acquirer receives Credit]
			<ul style="list-style-type: none"> <li>Debit adjustment initiated on the settled transaction needs to be honoured by the issuer subject to applicable dispute rights.</li> <li>Details of why Debit Adjustment was raised should be mentioned in MMT</li> </ul>		

Chargeback	Issuer	Settled Transaction  (For transaction type – Debit and Dispute Type Credit Adjustment and Debit Adjustment)	<p>Issuer may initiate a chargeback for the full or partial transaction amount within the specified time frame applicable to the specific message reason.</p> <ul style="list-style-type: none"> <li>• Once processed, a chargeback is not allowed to be withdrawn.</li> <li>• Chargeback can be raised for full or partial transaction amount.</li> </ul>	40 days	Not Applicable
Chargeback acceptance	Acquirer institution	Chargeback	Acquirer institution may accept the chargeback initiated by the issuing institution.	10 days from the chargeback processing date	Applicable  [Acquirer receives the Debit and Issuer receives Credit]
Credit Chargeback	Issuing institution	Settled Transaction (Transaction Type-Credit and Dispute Type Credit Adjustment)	<p>Issuer may initiate a credit chargeback for the full or partial transaction amount within the specified time frame applicable to the specific message reason.</p> <ul style="list-style-type: none"> <li>• Once processed, a credit chargeback is not allowed to be withdrawn.</li> <li>• Credit Chargeback can be raised for full or partial</li> </ul>	40 days from settled transaction	Not Applicable

			transac tion amount		
Credit Chargeback acceptance	Acquirer institution	Credit Chargeback	Acquirer institution may accept the credit chargeback initiated by the issuing institution.  A credit chargeback not accepted by the acquirer within given TAT is to be deemed accepted by the Acquirer institution.	10 days from the credit chargeback processing date	Applicable  [Acquirer receives the Credit and Issuer receives Debit]
Chargeback Deemed Acceptance	NPCI	Chargeback	Any chargeback not re-presented within the specified re-presentment due date is deemed to be accepted by Acquirer institution.	10 days from the chargeback processing date	Applicable  [Acquirer receives the Debit and Issuer receives Credit]
Re-presentment	Acquirer institution	Chargeback	Acquirer institution may present the transaction to the issuing institution to correct an earlier transaction processing to Indicate disagreement With the chargeback raised by the Issuing institution. Re-Presentment gives rights to the Acquirer institution to shift the transaction liability to issuing institution	10 days from the chargeback processing date	Not Applicable

Representment acceptance	Issuing Institution	Representment	Issuing institution may accept the representment initiated by the acquirer institution. Any Re-presentment-acceptance not accepted or pre-arbitration not raised within the specified re-presentment due date is deemed to be accepted by issuing bank.	10 days from the representment processing date	Not applicable
Pre-Arbitration	Issuing institution	Re-presentment	<p>When applicable, the issuing institution may use this message as a final attempt to mutually resolve the disputed transaction before Arbitration is filed with NPCI to resolve the dispute. This message requests the Acquirer institution to accept the liability of the disputed transaction.</p> <ul style="list-style-type: none"> <li>Once processed, a Pre-arbitration is not allowed to be withdrawn.</li> </ul>	10 days from the re-presentment processing date	Not Applicable

Pre-Arbitration acceptance	Acquirer institution	Pre-arbitration	<p>An Acquirer institution that receives a pre-arbitration attempt may provide their acceptance.</p> <ul style="list-style-type: none"> <li>Once processed, a Pre-arbitration acceptance is not allowed to be withdrawn.</li> </ul>	Acquirer institution must respond within 10 days following the Pre-arbitration processing date.	Applicable [Acquirer receives the Debit and Issuer receives Credit]
Pre-Arbitration decline	Acquirer institution	Pre-arbitration	<p>An Acquirer institution that receives a pre-arbitration attempt may provide their decline confirmation.</p> <ul style="list-style-type: none"> <li>No response to a Pre-arbitration within specified TAT will be deemed accepted.</li> <li>Once processed, a Pre-arbitration decline message is not allowed to be withdrawn.</li> </ul> <p>On receipt of pre-arbitration decline message issuing institution may raise arbitration case.</p>	An Acquirer institution must respond within 10 days following the Pre-arbitration processing date.	Not Applicable

Arbitration Case Filing	Issuing institution	Pre-Arbitration Declined  /Deemed Declined	<p>The Issuing institution may file an arbitration case to NPCI for a decision on the dispute.</p> <ul style="list-style-type: none"> <li>NPCI decides which party is responsible for the disputed transaction. The decision by NPCI is final.</li> <li>Once processed, arbitration is allowed to be withdrawn.</li> <li>No evidence should be submitted at arbitration stage</li> </ul>	Issuing institution must raise arbitration request with NPCI within 10 days following the pre-arbitration decline or deemed declined.	Not Applicable
Arbitration Case withdrawn	Issuing institution	Arbitration	Issuing institution can withdraw arbitration case	Within 10 days from arbitration raising date	Not Applicable
Arbitration Case-acceptance	Acquirer institution	Arbitration	An Acquirer institution that receives an arbitration attempt may provide their acceptance.	Within 10 days from arbitration received date	Not Applicable



NPCI review panel (NRP) / Arbitration  Case-continuation	Acquirer institution	Arbitration	Deemed Acceptance if no response from Acquirer institution  No evidence should be submitted at case continuation	If no response received from the acquiring institution within 10 Days from arbitration received date	Not Applicable
NRP Arbitration verdict	NETC Arbitration Committee	Arbitration	NPCI Arbitration Committee will provide ruling on arbitration case	NPCI Arbitration Committee will give verdict within 60 calendar days following the arbitration continuation/ deemed continuation	Applicable  [as per the verdict]
PRD Raise	NRP Loosing party	NRP Arbitration Verdict	NRP loosing party if not satisfied with the verdict can raise PRD	NRP loosing party if not satisfied with the NRP verdict can appeal to PRD for review within 10 calendar days from the next day of NRP verdict	Not Applicable

PRD withdrawn	NRP losing party	PRD raise	NRP Losing party, post raising PRD has an option to withdraw the PRD	NRP Losing party, post raising PRD has an option to withdraw the PRD within 10 calendar days from the next day of PRD raise	Not applicable
PRD Accept / Deemed Accept	NRP winning party	PRD raise	The NRP winning party can accept the PRD raise request	The NRP winning party can accept the PRD request within 10 calendar days, if no action is taken then it will be considered as deemed accept and the PRD decision will be against counterparty.	Applicable [Debit the NRP winning party and credit the NRP losing party]
PRD continue	NRP winning party	PRD Raise	The NRP winning party may continue with the PRD dispute	Within 10 calendar days from PRD raise	Not Applicable
PRD Verdict	Panel for resolution of disputes (PRD)	PRD Continue	The PRD committee will provide ruling on PRD case	Within 90 calendar days from PRD continue	Applicable [Debit the PRD losing party and credit the PRD winning party]

Good-Faith	Issuing Bank Or Acquirer	Settled transaction or dispute closed or TAT expired	This message may be used by either Bank (Acquirer/ Issuer) to request for transaction funds from the other Bank in good faith, if the other options listed above are not applicable or available	Within 160 days of settlement of transaction but not before the expiry of chargeback TAT	Not Applicable
Good-Faith attempt acceptance	Issuing Bank Or Acquirer	Good-faith	<p>The Bank that receives a good faith attempt may provide their acceptance confirmation.</p> <ul style="list-style-type: none"> <li>Once processed, Good Faith acceptance is not allowed to be withdrawn.</li> </ul>	Within 30 days from Good faith received date	Applicable [Case to case basis]
Good-Faith Decline/Deemed Declined	Issuing Bank Or Acquirer	Good Faith	The Bank that receives a good faith attempt may provide their decline confirmation or will get deemed declined post expiry of the TAT.	Within 30 calendar days from Good faith received date	Not Applicable

Good-Faith Decline/Deemed Declined	Issuing Bank Or Acquirer	Good Faith	The Bank that receives a good faith attempt may provide their decline confirmation or will get deemed declined post expiry of the TAT.	Within 30 calendar days from Good faith received date	Not Applicable
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## 6.6 Calculating Net Position

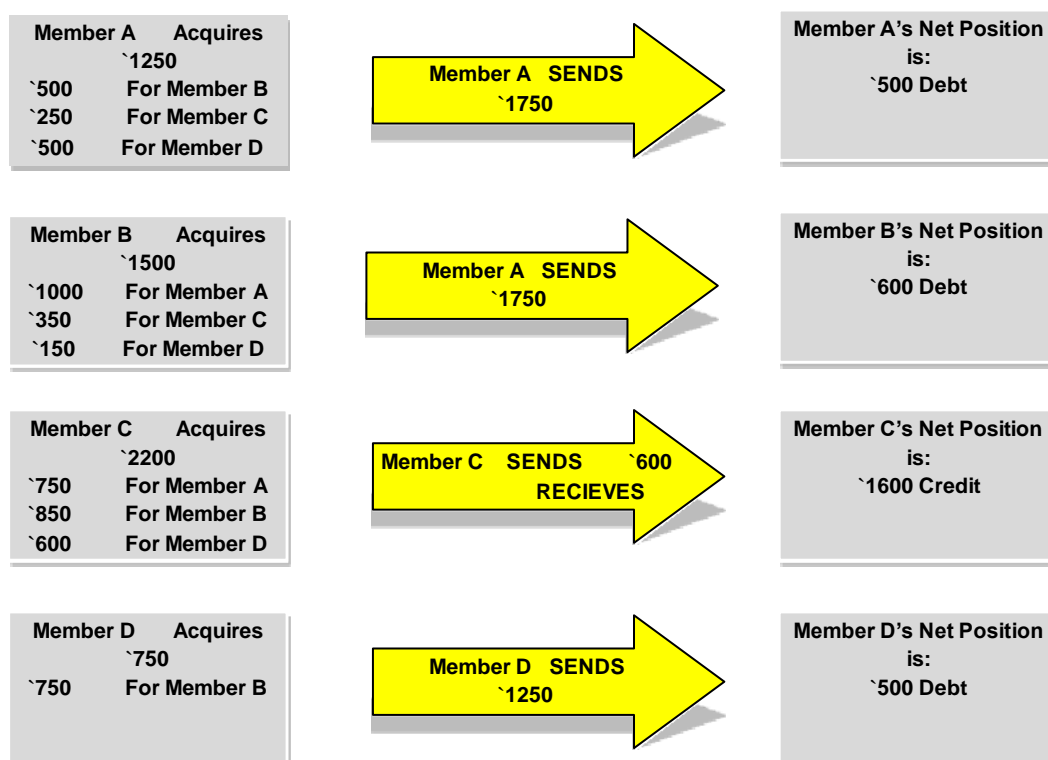


Figure 12- Calculating Net Position

The above diagram shows NPCI calculates the net settlement among the Members A, B, C & D.

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Please note the example above is only for illustration purpose and doesn't consider any interchange or other fees that maybe applicable during clearing and settlement of transactions. In this example all Members (A, B, C & D) have both an Acquiring and Issuing business. In case of Member A, it acquires transactions totalling INR1250 for cards issued by Members B, C & D (INR500, INR250 & INR500 respectively). Further it can be seen that Member A, issued cards are acquired for transactions totalling INR1750 by Member's B & C (INR1000 & INR750 respectively). Thus, Member A needs to receive INR1250 for Acquirer done on behalf of other Members and needs to pay INR1750 to other Members for Acquirer of its cards done by other Members. These gross positions are netted to arrive at a single net settlement amount, which in case of Member A is a debit of INR500. Similarly, the net position of each Member is calculated. It can also be noted that at the sum of the net positions for every Member, will always total to a sum of zero.

### **6.7 Net Settlement Activity**

This activity involves deriving the net settlement position for each of the Members

- Here, each successful cleared record is picked up and the net settlement effect for the transaction is derived for every Member.
- Transaction amount & Interchange amount paid out to the Members is populated in each cleared message (in three settlement cycles).
- Taxes will be charged as applicable.
- Separate Net Settlement entries will reflect in Member settlement account for NETC transactions.
- As described in the clearing and settlement cycle sections, on RTGS Holidays, the net settlement amount arrived at for each settlement bin, is not provided to the clearing house for fund transfer; instead the net settlement amount for that day will be provided on the subsequent working days along with that day's settlement file. There will be separate net settlement file for each day.

### **6.8 Reports**

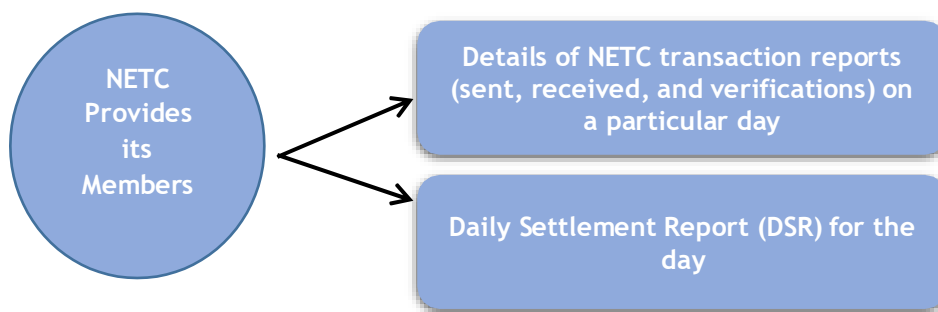
The report manager of the NRCS system allows the Members to download various pre-defined MIS reports. The document manager of NRCS manages the document uploads and downloads and ensures linking of the various documents with specific dispute cases.

NRCS system will create various MIS reports and daily settlement reports which will be shared with Members & NHA/IMCL.

### **6.9 Reconciliation**

Members will be provided with the following reports:

The reports in the above figure are part of the interface specification manual. NPCI would ensure that all Members receive these reports, while the Members should ensure daily reconciliation of their settlement accounts.



### 6.10 Adjustment to settlement

Discrepancies relating to reconciliation/ adjustment done by Members, based on reports furnished by NETC are the responsibility of the participating Members. Such discrepancies should be resolved by Members as per the settlement procedures set forth in the NETC PG.

### 6.11 Settlement between NPCI and NHAI/IHMCL

NHAI/IHMCL will open an account with a Scheduled Commercial Bank in India. NHAI/IHMCL will provide the Standing Instruction to this designated settlement bank for debiting its account towards interchange amount.

NPCI will debit the interchange amount from this bank's designated settlement account with RBI on daily basis. NPCI will further distribute the interchange amount with the Members on a daily basis.

On certain use cases, as per instructions from NHAI/IHMCL, NPCI will debit the Govt. body of the particular use case and distribute the interchange amount with the Members on a daily basis including NHAI/IHMCL.

Designated settlement bank needs to submit the "Letter of Authority" (LOA) which authorizes NPCI to use its settlement account with RBI for the purpose of settlement of NETC transactions. The specimen form can be found in [Annexure IV](#) – Letter of Authority.

### 6.12 5 Party Model

On certain use cases, as per instructions from NHAI/IHMCL, a new mode of operation, namely 5 party model would be practiced.

Benefit of the model : This will facilitate real time Auto credit of IHMCL PMF as a part of settlement cycle. This functionality can be used for auto transfer of IHMCLPMF to IHMCL's sponsor bank account for Parking Plazas, State Highway toll plazas etc. where PMF is not borne by IHMCL .

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Sr.no	Stakeholder	Entity	Debit/Credit
1	Govt. Body	Bank A	Debit
2	Acquirer	Bank A	Credit
3	NPCI	NPCI	Credit
4	Issuer	Bank B	Credit
5	IHMCL	IHMCL	Credit

In these cases, NPCI will debit the Govt. body of the particular use case and distribute the interchange amount with the Members on a daily basis includingNHAI/IHML

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## Section 7: Dispute resolution

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### **Section covers:**

- **Dispute management by NPCI**
- **Mutual Assistance**
- **Disputes Resolution Mechanism**
- **Dispute Processing**



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## 7.0 Dispute resolution

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### 7.1 Dispute Management by NPCI

The procedure for handling disputes in the NETC Network is as follows:

- NPCI maintains a database for all transactions performed by the Members.
- Only valid disputes are processed by the NRCS System.
- NRCS System validates, and processes disputes raised by Members and disputes are settled along with previous business day approved transactions.
- The Members can use NRCS for raising the adjustments, downloading adjustments reports and daily settlement files.
- In case of any unsettled disputes, NPCI will give the final verdict, but the user has rights to raise the dispute in consumer court and bank ombudsman.

### 7.2 Mutual Assistance

- A Member must try to offer mutual assistance to other Members to resolve disputes between NETC FASTag holder, Issuer, Acquirer & Plaza operator.
- If a NETC FASTag holder or a Plaza Operator accepts financial liability for a transaction, the related Member must reimburse the other Member directly through refund, fund collection or disbursement options as applicable.

### 7.3 Disputes Resolution Mechanism

- NPCI has set up a Panel for Resolution of Disputes (PRD) comprising four Members and the Chairperson to investigate unresolved interbank settlement disputes as per the directives of the Department of Payments and Settlement Systems (DPSS) of the Reserve bank of India vide notification: DPSS.CO.CHD.No:654/03.01.03/2010-2011 dated September 24, 2010.
- The **PRD panel will consist of five officials**—four from the NETC Steering Committee and one from NPCI as the Chairperson.
- NETC network would continue to operate under the contract during the PRD proceedings unless the matter is such that the operation with disputing Members cannot possibly be continued until the decision of the PRD or the Appellate Authority at RBI is pronounced, as the case may be.

### 7.4 Disputes Processing

- All Member banks have to process dispute through NETC system. Disputes can be raised in NETC system by the following two methods:
  - Web-UI-NRCS: Selecting a transaction on the NETC system and raising the relevant dispute request.
  - File Staging: Raising the relevant dispute request through file staging on NETC System.
- Dispute management is a process through which NETC Members can determine the validity and liability of a financial transaction.

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- NRCS provides an electronic platform to raise and resolve disputes among Members having provision to exchange documentary support and details for the relevant transaction done through NETC System.
  - For each dispute record processed, a Dispute Reference Number will be created, which will be a unique across the NETC System.
  - Dispute can be closed by the Members, however in certain circumstances NPCI will have the authority to close the dispute if it exceeds the timelines that are specified in the system, with due intimation to the concerned banks.
  - The audit log details are to be maintained for all actions carried out during the dispute resolution life cycle of the records, for a period as would be decided by NPCI and shared with participating Members, Plaza operator.
  - Debit Adjustment (DA) can be raised by Acquirers. Plaza operators must route their DA through Acquirers. Chargebacks can be raised by Issuers on behalf of the FASTag Users through NRCS application.
  - Issuers shall actively monitor the chargeback ratio to identify areas for improvement and potential issues.

[Annexure VII](#) explains the Dispute Management System for NETC PG, and settlement guidelines.

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## Section 8: Security and Risk Management

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### Section covers

- Risk management at Issuer and Plaza
- NETC FASTag Authentication Method
- Security for NETC FASTag Issuance
- Issuing Portfolio
- Cyber Incident Reporting Clause for Vendors
- Fraud Detection Key Storage - General Guidance

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## 8.0. Security and Risk Management

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### 8.1 Risk management at Issuer, Acquirer levels and Plaza Operator

#### Risk Management at Acquirer

- Multiple requests from same Plaza with same transaction number to avoid duplicate transactions.
- Adequacy of collateral lodged with NPCI.
- Fraud check (online or offline).
- Population of correct values in the financial message request.
- Any other limit checks applicable for the Members mandated by regulatory guidelines.

#### Risk Management at Issuer

- Ensure the correct NETC FASTag is issued and only one NETC FASTag is affixed against the registered vehicle class.
- Message validation coming from NETC System.
- Checks on requests from the same NETC FASTag ID within same time or at far Plaza location.
- Maximum limit for toll transaction in a day for the linked NETC FASTag account.
- Fraud check (online or offline) using NETC FASTag signature validation

#### Risk Management at Plaza

- Exception list validations/ verifications.
- Fraud check.
- Population of correct values in the financial message request.

Any other checks applicable for the Members mandated by regulatory guidelines.

## NETC FASTag Authentication by Lane Controller



TSDA is a mechanism where the host system uses a digital signature based on public key techniques to confirm the legitimacy of critical NETC FASTag-resident static data. The relationship between the data and the cryptographic keys is shown above. It should be noted that the issuer host should support signature validation to authenticate the NETC FASTag data.

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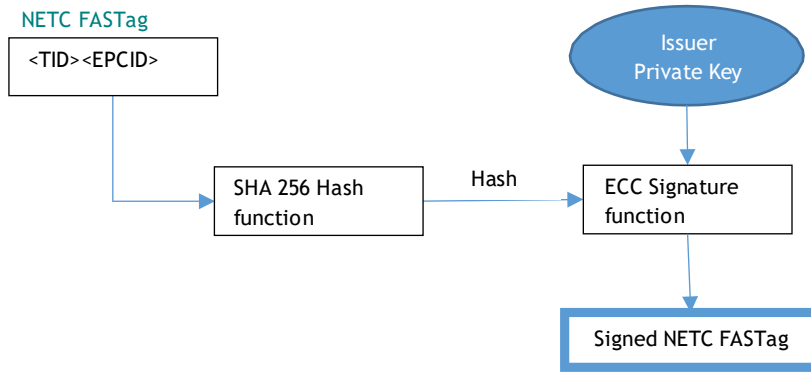


Figure – NETC FASTag Signing

Hexa-decimal string of NETC FASTag TID and NETC FASTag ID [EPC ID] is concatenated to generate the NETC FASTag Static Data. This static data is hashed with SHA-256 cryptographic hash and signed using Issuer Private Key. The process is illustrated in above figure.

#### NETC FASTag Authentication by Issuer Host

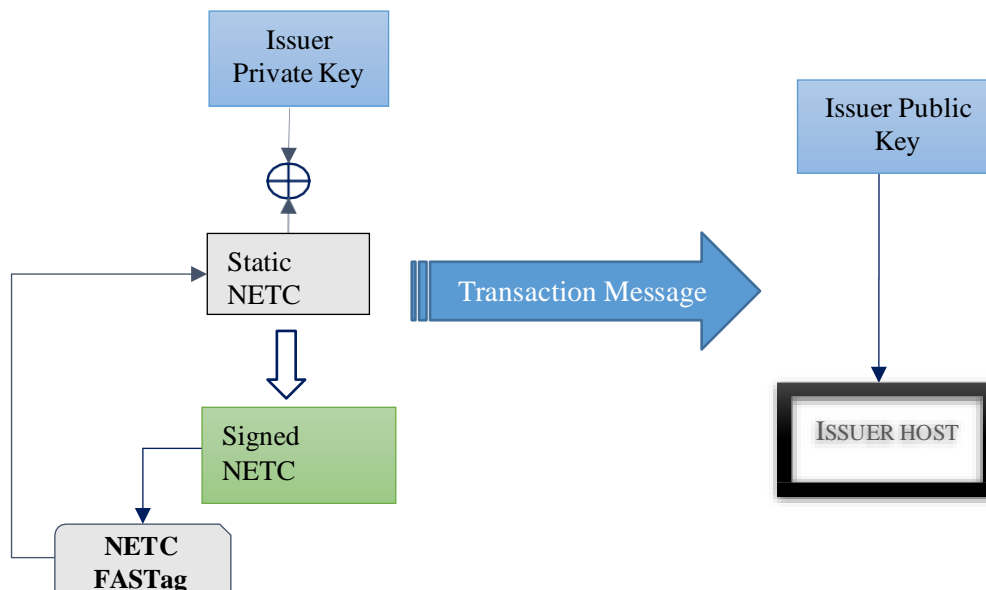


Figure – NETC FASTag Static Data Authentication

The Issuer host shall also validate the NETC FASTag signature with the NETC FASTag TID, NETC FASTag ID [EPC ID] and User memory data received in the transaction message. Issuer Host Shall Blacklist any NETC FASTag with an invalid signature.

*Note: The current CCH Specification defined IHMCL/NHAI doesn't contain fields for TID and entire user memory block in the message definition. The Attribute\_7 and Attribute\_9 fields in*

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*CCH transaction message definition should be used by Plaza operator to pass TID and 512 bits of user memory from Plaza server to Acquirer Host.*

### **8.3 Security for NETC FASTag Issuance**

This section addresses the security related functions that need to be performed by an NETC FASTag issuer.

- The generation, management and secure storage of the asymmetric issuer public/private key pairs.
- The transfer of the Issuer Public Keys to NPCI for certification.
- The storage of Issuer Public Key certificates and the NPCI public keys for verification of these certificates.
- The use of an issuer private key to sign NETC FASTag data for use in NETC FASTag authentication.
- The secure transport of keying material necessary for NETC FASTag personalization to the NETC FASTag manufacturer factory.

### **8.4 Issuing Portfolio**

Issuer to perform the following activities during the life of a NETC FASTag issuance programme:

- Preparation - To be completed prior to any NETC FASTag issuance
- NETC FASTag production (TSDA) - the steps for issuing NETC FASTags employing NETC FASTag Static Data Authentication
- NETC FASTag issuance - the steps to provide vehicle owners with newly produced NETC FASTags

#### **8.4.1 Preparation**

The following activities need to be performed by an issuer prior to any NETC FASTag issuance. They also need to be performed when keys change, or certificates expires.

**Key Pair Generation** - The issuer needs to securely generate and store one or more public/private key pairs. This requires the use of protected memory in a physically secure device, utilising a random or pseudo-random number generator and primality-checking routines.

**Issuer Key Pairs** - the private key signs NETC FASTag data. The public key is sent to NPCI to obtain an Issuer Public Key certificate.

The Issuer Public Key should be managed in such a way that it is unchanged when sent to the NPCI for certification. The issuer needs to transfer each Issuer Public Key to the NPCI and receive in return a signed public key certificate. The Issuer Public Keys should be transferred

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in such a way that NPCI can verify their integrity and origin. Upon receipt of a public key certificate from NPCI, the issuer should verify it using the relevant NPCI Public Key.

#### **8.4.2 NETC FASTag Production**

The following security relevant steps need to be performed by an issuer for each NETC FASTag issued:

NETC FASTag Static data preparation: The NETC FASTag manufacturer generates and writes EPC ID onto the NETC FASTag's EPC memory as per the defined format. Once written the EPC memory is locked to ensure that EPC memory is protected from any further write operations. NETC FASTag ID (Transducer ID) should be unique and come from the chip manufacturer.

Signing of static data: The issuer signs NETC FASTag ID and TID using an issuer private key to produce the Signed Static NETC FASTag Data.

NETC FASTag Signed data preparation: The NETC FASTag manufacturer writes dummy vehicle registration number, vehicle class and the signature values onto the NETC FASTag's User memory as per the defined format. Once written the user memory is locked to ensure that user memory is protected from any further write operations.

#### **8.4.3 NETC FASTag Issuance**

The personalised NETC FASTag must be securely and separately transferred to the vehicle owner. The Member should ensure all the security guidelines are followed for acceptance of NETC FASTag from the NETC FASTag manufacturers and delivery of NETC FASTag to the respective banking correspondent.

#### **Privacy issues**

Issuer should be aware that there may be privacy concerns with data that is available over the RF interface of a NETC FASTag. It is therefore recommended that personal data not be sent over this interface as part of a normal transaction and should not be available using any command over the RF interface.

#### **8.5 Fraud Detection**

The issuer should use the NETC FASTag data in the online transaction processing for its risk evaluation. The results of reader processing are defined in the Reader Verification Results (RVR). Other fields in the request, such as the Transaction identifier should be verified for its genuineness. Incoming values that were present on the NETC FASTag such as the EPC ID and TID should be checked to assure they match the personalised value. The Members should graduate to real time risk management systems over the period of time. The Member should also adhere to the risk management practices as prescribed by RBI circulars and policies.

Issuer must audit the engaged bureau depending upon their internal audit policy.



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## 8.6 Cyber Incident Reporting Clause for Vendors

1. The Service Provider acknowledges that the Government of India has declared the computer resources relating to certain products of NPCI, being Critical Information Infrastructure of NPCI and the computer resources of its associated dependencies to be protected systems for the purpose of the Information Technology Act, 2000. In this regard, the Service Provider agrees and undertakes to report to NPCI the occurrence of all Cyber Incidents (defined below).

For the purposes of this clause / agreement, Cyber Incidents shall mean an attempted breach or breach in the information security systems of the Service Provider and or any unauthorised access to or breach in the information technology-based systems of the Service Provider, as more specifically specified below:

- I. Targeted scanning or probing of critical networks or systems.
  - II. Unauthorised access of Information Technology systems or data
  - III. Defacement of website or intrusion into a website and unauthorised changes such as inserting malicious code, links to external websites etc.
  - IV. Malicious code attacks such as spreading of virus/worm/Trojan/Bots/Spyware/Ransomware/Crypto miners.
  - V. Attack on servers such as database, mail and DNS and network devices such as routers
  - VI. Identity theft, spoofing and phishing attacks.
  - VII. Denial of Service (DoS) and Distributed Denial of Service (DDoS) attacks
  - VIII. Attacks or malicious/suspicious activities affecting systems/servers/networks/software/applications related to Big Data, blockchain, virtual assets, virtual asset exchanges, AI(Artificial Intelligence) & ML (Machine Learning), automation, robotics,
  - IX. Data breaches
  - X. Data leaks
  - XI. Attacks or incidents affecting digital payment systems.
  - XII. Attacks through malicious mobile apps.
  - XIII. Unauthorised access to social media accounts
  - XIV. Attacks or malicious or suspicious activities affecting cloud computing systems, servers, software or applications.
2. In the event the Service Provider finds any malware and/or if any Cyber Incident occurs on their Internal IT systems, the Service Provider shall notify NPCI of the same, in writing and ensure the following:
    - I. The intimation of malware and Cyber Incident should be reported within 24 hours of the detection of such incident.
    - II. Communication should be sent to [csirt@npci.org.in](mailto:csirt@npci.org.in)
    - III. The communication should be clear and concise, providing all the necessary information about such incident, including the steps that are being taken to address the issue and minimize any potential damage.
    - IV. The communication should clearly articulate about the impact it may have on NPCI, as well as any potential risks or vulnerabilities that may be exposed and perceived threats to the Service Provider's organization systems, data, or operations.
    - V. It should also provide guidance on what steps the Service Provider is going to take to protect themselves from any potential threats or vulnerabilities that may arise because of the incident.
  3. The Service Provider agrees that any failure to comply with the above-mentioned obligation will constitute a material breach of the Agreement/PO and NPCI will have the right in its sole discretion to terminate the Agreement/PO.

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4. Additionally, NPCI has the right to impose penalty @ the rate of 1% of the total value of the [PO/Fees under the Agreement] for each event of failure of reporting a Cyber Incident by the Service Provider (as per clauses above) or claim a total amount of Rs 50,000 from the Service Provider whichever is higher.

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## **8.7 Key Storage – General Guidance**

Keys can be stored in a ‘hardware’ location such as an Hardware Security Module (HSM) or a ‘software’ location such as on a host computer system. Keys are protected by a variety of physical means such as the tamper resistance of an HSM and the logical protection of an operating system in HSMs and host computers. The Members should use HSM to store the cryptographic keys and the Plaza servers can use software system to store the public keys.

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## Section 9: Administrative policies and procedures

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### Section covers

- **Fines**
- **Pending dues**
- **Invoicing**
- **Liability Shift**

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## **9.0 Administrative policies and procedures**

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### **9.1 Fines**

All Members should comply with the NETC PG, as framed by NPCI. NPCI reserves the right to impose penalty or levy fines on member Banks / entities participating in NPCI Platform / Products / Services either directly or indirectly, on account of breach(es) or non-compliance of the Agreement or the prescribed Procedural Guidelines or NPCI Circulars or any Applicable Laws, rules or regulations in concurrence with IHMCL. Penalty may include imposing a fine of an amount equal to the one-time Membership fee on Members participating in the NETC network or suspending/ terminating end-to-end (host-to-host) connectivity of the Member for frequent violations of these guidelines. NPCI reserves the right to either notify the Member or impose penalty on the Member depending on the Member's past record. No fine would be imposed, if the rectification is done within the stipulated time provided by NPCI. Failure to abide by NETC PG, would also be subject to steering committee recommendations/legal action.

### **9.2 Pending dues**

All Members should clear all pending dues such as fines, settlement dues, and other liabilities within the stipulated time provided by NPCI. Failure to settle all dues within the stipulated time could result in suspension/ termination of the Member from further participation.

### **9.3 Invoicing**

Fines will be billed separately and would be sent to the respective Members. These fines would be payable to NPCI in accordance with the terms and conditions defined in the invoice.

### **9.4 Liability Shift**

If a member fails to fulfill its commitment towards other members participating in the NETC program, and such an action results in these members incurring losses in settlement or transaction fees, the member committing such an offence should make up completely for the loss. In such a case, funds available in the defaulting member's settlement account would be used to settle the claims at the earliest. The member shall be liable for any losses suffered / caused to any other members using NPCI Products / Platform / Services, either directly or indirectly, on account of breach(es) or non-compliance of the member agreement or the prescribed Procedural Guidelines or any specifications shared by NPCI or Applicable Laws, rules or regulations by the member, and the member shall be responsible to make good the loss by authorizing NPCI to deduct the amount equivalent to the losses caused by the member from its Settlement Account as a part of Settlement or transfer / make payment of the amount equivalent to the losses in such other member's bank account shared by NPCI.

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## Section 10: Compliance

- **Compliance for Members**

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## 10.0 Compliance

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Members of NETC network need to adhere to the compliance requirement and maintain the integrity of NETC payment system. The compliances, not limited to following, are brand compliance, certification compliance, Plaza System management, third party compliance, vendor compliance. Members of NETC Network also need to adhere to NETC Procedural Guidelines issued from time to time by NPCI and also comply with any other guidelines/ Circulars/ Notification issued by the RBI, NPCI and IHMCL/NHAI from time to time basis.

Any non-compliance to the NPCI mandate will be under the purview of the Surveillance & Enforcement (S&E) Policy of NPCI. Refer section 10.1 for the enforcement process.

### 10.1 Enforcement Process

The following corrective steps shall be taken for any non-adherence to NPCI regulations.

#### Level 1

- Show Cause Notice (SCN) shall be issued to the Members/ participants against any deviation observed.
- SCN will be issued based on the severity of the non-compliance advising the Members/ participants to explain why action should not be taken on such Members/participants for the non-compliance.
- Members/ Participants shall provide response within 15 days from the date of SCN.
- If the response is acceptable, then the observation shall be closed at NPCI end.

#### Level 2

- If the response to SCN is not received within 15 days or the response is not acceptable, then
  - Warning letter shall be issued/ addressed to the senior official of the Members/ participants.
  - Members/ participants shall be given suitable time from the date of issuance of such letter to take remedial action based on the severity.
  - If not remedied within the said timelines, the Members/ participants will be served with a penalty notice basis the severity of non-compliance (i.e. low/ medium/ high)
  - The penalty shall be imposed therein if there is no response, or the response is inadequate/ not acceptable to NPCI

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### Level 3

- After imposing the penalty, if it is observed that the Members/ participants have not taken corrective steps or still not responded to NPCI letter, then the issue shall be escalated to the Top management of the Members/ participants.
- The Member/ participant shall be put under temporary suspension post the above activities with appropriate internal approval. The period of temporary suspension shall be based on the severity of the non-compliant event.
- The non-compliant Member/ participant shall be provided with suitable time to remedy the non-compliant event and it shall be monitored for closure. Post completion of initial temporary suspension period, confirmation shall be sought from the Members/ participants for the corrective steps taken at their end.
- In case Member/ participant has remedied the non-compliant event, the suspension shall be revoked after validating remedial measure taken by such Member/ participant.
- In case the Member/ participant has not remedied the non-compliant event, the suspension will be continued till such time it is not remedied.
- After considering the following factors, the case shall be taken up for permanent termination of Membership for the product.
  - severity of the case
  - number of times the temporary suspension has been extended
  - failure to implement remedial measures during the suspension period
- Any such action as permanent termination of Membership shall be reported to the RBI.
- In case the remedial measures are implemented by the Members/ participants, then the termination shall be put on hold and status of non-compliance shall be monitored. If status found to be compliant, then the case shall be closed.

### Process for penal action

The penalty shall depend upon the severity of the non-compliance. The Surveillance & Enforcement (S&E) division shall assess each non-compliance by Members/ participants and classify the severity of such case as low/ medium/ high. NPCI shall inform the Members/ Participants the severity level for any one or more events of non-adherence to the NPCI guidelines. Based on the severity, the penalty shall be determined. The monetary penalty shall be recovered by NPCI after thirty (30) days from the date of communication of imposing penalty to the Member/ participant. The communication shall be by way of letter or email. In case of proper explanation (acceptable to NPCI) is provided by the Member/ participant within



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30 days from the date of the communication, the penalty will not be levied. Any decision by NPCI, in this connection, shall be final and binding to such Member/ Participants.

Determining the amount of penalty

The amount of penalty as per severity is as follows:

Severity	Amount of Penalty
Low	₹ 10,000 per violation (plus applicable taxes)
Medium	₹ 50,000 per violation (plus applicable taxes)
High	₹ 2,00,000 per violation (plus applicable taxes)

It may however be noted that if the severity of the non-compliance by any Member/ Participant has impacted or has the potential to adversely impact the ecosystem, NPCI shall initiate immediate corrective steps towards temporary or permanent suspension of services (surpassing the sequential steps mentioned above as Level 1, 2, and 3 as part of enforcement process) and/or levy penalty or recover an amount equal to the tune of financial loss suffered by other participating entities as determined by NPCI based on the details available at its disposal.

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## Section 11: Certification

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### **Section covers certification for:**

- **NETC FASTag Bureau Certification**
- **RFID Reader Certification**
- **Members Certification**

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## **11.0 Certification**

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### **11.1 NETC FASTag Bureau Certification**

NPCI [or third-party agencies appointed by NPCI] will certify the NETC FASTag manufacturer and NETC FASTag personalization bureau. The certified NETC FASTag manufacturer will be eligible to supply RFID NETC FASTags to participating Members. The certification will include but not limited to the following cases:

- 1) Tamper evident
- 2) Relative humidity
- 3) Operating temperature
- 4) Storage temperature
- 5) ISO, EPC Reference Standards and data encoding
- 6) UV Exposure
- 7) Form factor
- 8) NETC FASTag read rate
- 9) Data transfer rate

For the existing NETC FASTAG, ARAI Certification standard will be considered as a preliminary criterion and NPCI will further certify the vendors.

### **11.2 RFID Reader Certification**

NPCI [or third-party agencies appointed by NPCI] will certify the RFID reader. The certified reader manufactures will be eligible to supply RFID readers to participating Plaza operators. The certification will include but not limited to the following cases

- 1) Antenna testing
- 2) Read rate monitoring
- 3) Reader signal strength
- 4) Reader Application testing

*Note: The reader certification will be applicable in the future phases of the project.*

### **11.3 Members Certification**

#### **11.3.1 NETC Online System Certification**

NETC online system specification is capable of supporting both acquirers and Issuer. NETC Switch supports routing of transactions between issuer and acquirer through NPCI network. The Members need to be certified for successful processing of NETC transactions on the NPCI network.

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### **11.3.2 NETC Real-time Clearing and Settlement System (NRCS) certification**

NPCI has developed NETC Real-time Clearing and Settlement System (NRCS) which is a web and file based Clearing, Settlement & Dispute Management System for processing of NETC transactions. NRCS System takes the transactions information from the NETC online switch for clearing and settlement, the Member need not to submit any data file for clearing and settlement. The Members need to certify themselves with NPCI for NRCS.

### **11.3.3 Certification pre-requisites**

The following pre-requisites need to be adhered before applying for the certification process:

- a. The Member should have a test UAT system to start the testing for certification before moving to the production system. The Member should not carry out any testing in the production system
- b. The Member should successfully complete the sandbox testing before commencing for certification
- c. The Member should have a dedicated team and system to undertake testing, certification and audit of the system.
- d. The acquirer Member need to ensure that the integration of acquirer host with Plaza system is in compliance with Interface Control Document [ICD] applicable from time to time before commencing for NETC certification. NPCI shall not be certifying Acquirer host interface with Plaza system.

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## Section 12: Member On-boarding

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### **Section covers certification for:**

- **Membership Fees**
- **Acquirer On-boarding process**
- **Issuer On-boarding process**

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## 12.0 Member On-boarding

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NETC Membership is open to all banks. Participating banks need to submit the “Letter of Authority” which authorizes NPCI to use their settlement account with RBI for the purpose of settlement of NETC transactions. The specimen form can be found in [Annexure IV](#) – Letter of Authority.

New Members wanting to be Acquirer/ Issuer in NETC ecosystem should take the approval from IHMCL.

The Acquirer/ Issuer should adhere to all the guidelines, rules and regulations as stated in the Payment and Settlement Act, 2007 of Government of India and Reserve Bank of India.

Applicants intending to participate in NETC may apply for Membership in the format given in [ANNEXURE – II](#).

### 12.1 Membership Fees

For participation in NETC for a Member, following are the fees applicable:

- 1) One-time Membership (Subscription) fees is charged by NPCI during bank On-boarding and is non-refundable. Charges are INR3 lacs (excluding GST) for RBI direct Members and Cooperative banks while INR1.5 lacs (excluding GST) for Regional Rural Banks (RRBs).
- 2) NPCI collects a collateral amount of INR5 lacs (GST not applicable) during bank On-boarding and is refundable after bank's exit from the program.
- 3) NETC Certification fees is charged as per annual NPCI Certification policy (NPCI releases annual certification circular). Currently the certification fees charges are INR3 lacs (excluding GST) for RBI direct Members and Cooperative banks while INR1.5 lacs (excluding GST) for RRBs. If bank has already paid certification fees for any other NPCI product for the FY, certification fees is waived off. Re-certification fees of a Member in NETC will be same as that of certification.

### 12.2 Acquirer On boarding

Form to be submitted by Acquirer

Signed Agreement & forms: As per annexure

Non-Disclosure Agreement: As per [Annexure V](#)

Plaza ID & Reader manufacturer details

Upon on-boarding of Acquirer NPCI will issue the below:

Participant ID

Acquirer ID

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NPCI Public Key

Functional and Technical Specifications

### **12.3 Issuer On boarding**

Form to be submitted by Issuer

Signed Agreement & forms

Non-Disclosure Agreement: As per Annexure V

NETC FASTag Manufacturer details

Issuer Public Key

Upon on-boarding of issuer NPCI will issue the below

Participant ID

EPC ID Range

NPCI's signed issuer key

Functional and Technical Specifications

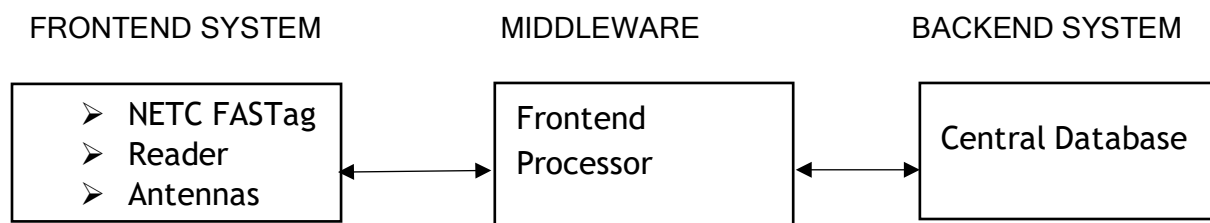
Entities regulated under RBI/NHAI/IHMCL can be on boarded subject to clearance post risk/compliance/AML assessment by relevant teams of NPCI.

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## PART II – Radio Frequency Identification (RFID) and Vehicle Identification

### 1.0 Introduction

RFID based NETC system consists of three main components. The first one is the front-end system, which consists of the NETC FASTags, readers and antennas. The second is the middleware, which consists of a frontend processor and a link to the central database where all the product information is stored. The last part of the RFID system is the backend system, which consists of the central database and an application which brings usefulness to the NETC FASTag information retrieved from the Tagged objects by the RFID middleware.



In NETC program “The NETC Lane” on the Plaza acts as the front-end system which works as per the theory defined in subsequent para. The “Lane Controller and/or Plaza server” acts as the front-end processor which executes the transaction at the Plaza. The Acquirer host, NPCI switch and the issuing host contributes towards the backend system where NPCI Mapper is acting as central database. The frontend system and the middleware are the currently under purview of IHMCL/NHAI.



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## 1.1 RFID Background

A passive RFID system is based on the backscatter principle which works in the following way (Figure 1). The RFID reader transmits a signal in the form of EM (Electromagnetic) waves. An RFID NETC FASTag within the field of the RFID reader receives the waves and converts the EM waves into voltage, to power the chip and electronic circuit in the NETC FASTag. The NETC FASTag thus transmits back a modulated signal containing the RFID code.

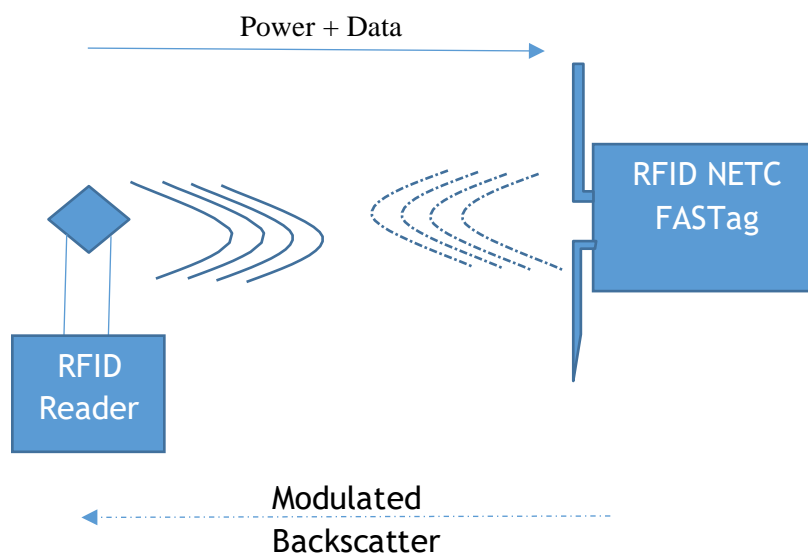


Figure 1 - Working of typical RFID System

There exists a communication between the NETC FASTag and the base station antenna through the electromagnetic waves reflected by the NETC FASTags. This kind of communication is called the backscatter coupling. A backscatter type RFID system consists of a NETC FASTag, reader, antenna and a computer controller. The chip in the NETC FASTag helps in responding to the commands sent by the reader through the antenna obeying a definite protocol. The NETC toll ecosystem will use passive RFID NETC FASTags in compliant with EPC Class 1 Generation II Standards. The air interface should follow ISO 18000 6C standards.

## 2.0 NETC Lane

Plaza consists of various lanes for passage of vehicles. NETC Lane is a lane supporting electronic processing of toll payments allowing collection of toll while vehicle is in motion. Each Plaza can have more than one NETC Lane. The data captured from the NETC Lane is sent to the Plaza Server for further processing. NETC Lane consists of fixed RFID antennas, NETC FASTag readers, automatic vehicle classification system, image capturing camera, weight in motion system and a computerized system (Plaza Server) for uniquely identifying each vehicle.

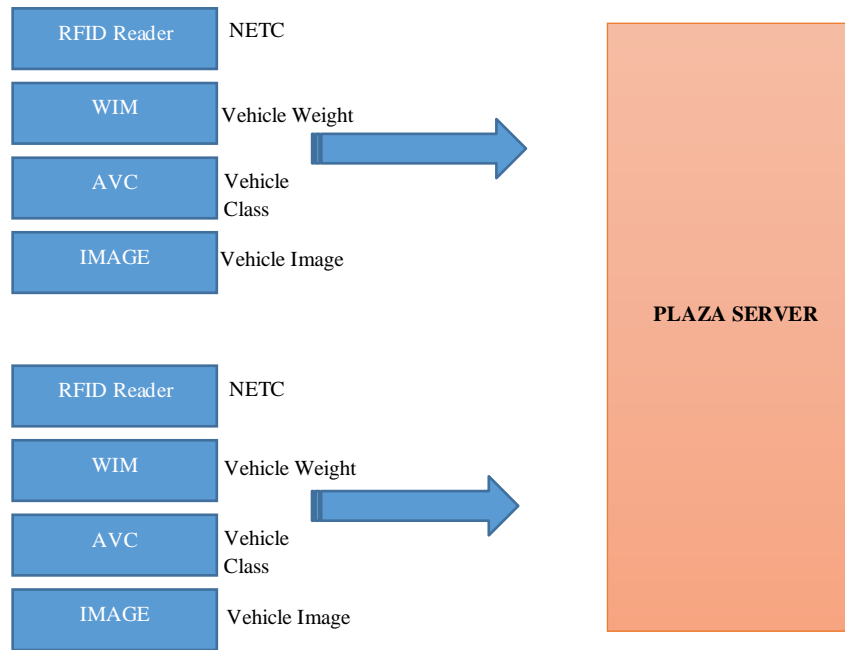


Figure 6 - NETC Lane

The above diagram illustrates various NETC lanes which are present on a Plaza.

Various systems which are installed at the NETC lane are:

I. NETC FASTag Reader

It is a device installed at Plaza that is used to read information from the NETC FASTag which is affixed on the vehicle. The RFID reader transmits a signal in the form of EM (Electromagnetic) waves. An RFID NETC FASTag within the field of the RFID reader receives the waves and transmits back the RF backscatter.

II. Automatic Vehicle Classification (AVC)

It is an alternative system which is used by Plaza operator to identify the vehicle class. Usually an infrared profiler is used to generate the vehicle profile which in turn is matched with the pre-defined or standard vehicle profiles.

III. Weigh-in-motion (WIM)

These devices are designed to capture and record vehicle weight. Vehicle separators are used to distinguish between the automobiles aligned in queue. Unlike static scales, WIM systems are capable of measuring weight of the vehicle, traveling at a reduced or normal speed. The weight from WIM system will be used by Acquirers to calculate the fare of overweight vehicles. WIM calculation will not be considered in the current phase of the project but may be applicable in future phases as per the instructions from IHMCL/NHAI.

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#### IV. Image Capturing Cameras

It is used to capture the image of vehicles passing through the NETC lane. This image will be used to resolve any disputes raised by the users or Plaza operator.

The input from all the above systems are required for proper functioning of NETC solution. All the information generated from these systems are synchronized and sent to the Plaza Server for further processing.

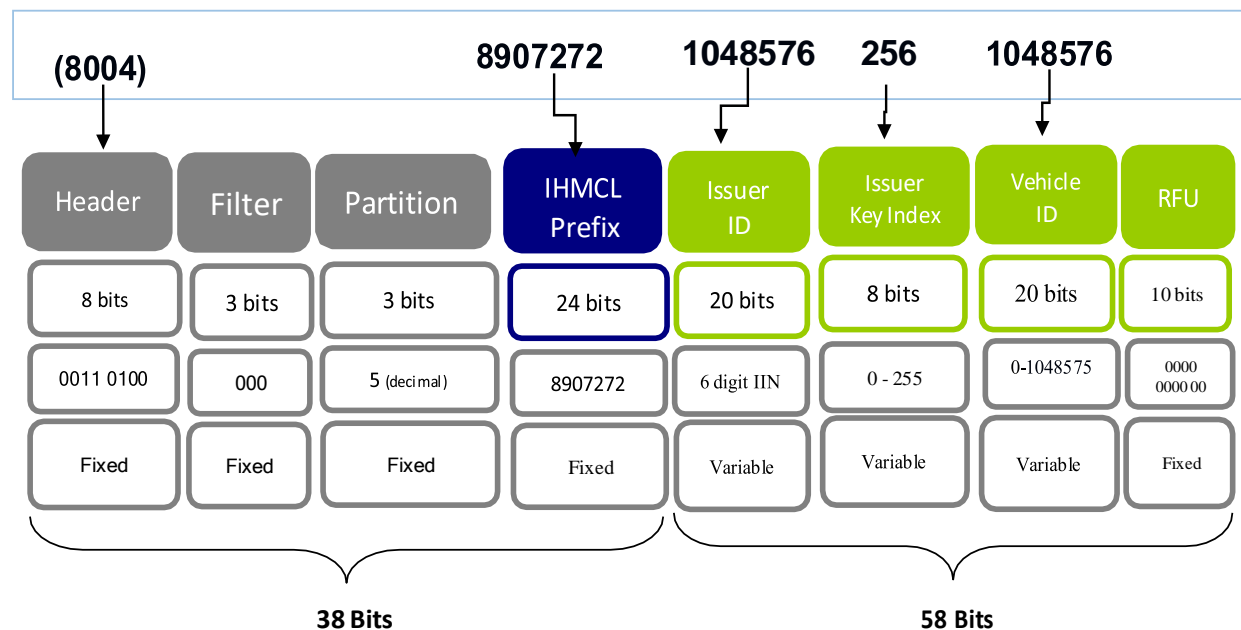
Indian Highways Management Company LTD (IHMCL) will be implementing NETC system on the Plazas of National Highways of India.

### 3.0 NETC FASTag – IHMCL GS1 Code

NETC FASTag is the brand name for the passive RFID NETC FASTags used in the NETC program. NETC FASTag are passive RFID NETC FASTags affixed on the windshield of the vehicle and are used to identify the vehicle uniquely. The data encoded in the NETC FASTag is defined as per the GS1 Standards detailed below.

EPC Memory - NETC FASTag Encoding Specification

IHMCL - GS1 Code = 8907272



Bit Structure - 58 Bits:

Segment	Bits	Remarks
Issuer ID	20	Up to 1048575 issuer ids
Issuer Key Index	8	256 keys per Issuer ID
Vehicle ID	20	1048575 vehicles per key per Issuer ID
RFU	10	Reserved for future use

## 4.0 Transaction processing at Plaza

This program aims to establish a non-stop transaction processing regime in which a vehicle with a single passive RFID NETC FASTag can pass through Plazas etc. on Indian highways and make payment without actually stopping. The system envisaged by the program is complex, encompassing the function of a nation-wide clearing house in which all the related Concessionaires (operating the Plazas) participate.

The Plaza setup for processing NETC FASTag transactions [i.e. NETC Lane and any other infrastructure required at Plaza] is the responsibility of the Plaza operator as per the guidelines issued by IHMCL/NHAI. The transaction processing rules are defined by IHMCL in CCH document ICD 2.4 (SFTP based) & ICD 2.5 (API based). The Plaza operator and Acquirer has to adhere to the CCH specifications for processing and Acquirer of the transaction.

There is no separate KYC requirement from NHAI/IHMCL for the issuance of NETC FASTag. However, the user has to provide the proof of Vehicle i.e. RTO registration certificate to the issuer Member. The issuer Member will only adhere to the KYC requirements for the underlying payment instrument while linking it to NETC FASTag.

## 5.0 Fraud Management at Plaza

Plaza operator is responsible for the NETC lane as per the details mentioned. In case the Plaza operator has not adhered to the security guidelines and any transaction proved to be fraudulent due to non-adherence of security guidelines leading to cloning of NETC FASTags, will be reviewed and compensated by IHMCL/NHAI on case to case basis. IHMCL/NHAI will create separate funds to compensate such fraudulent transactions, referred as “NHAI/IHMCL compensation fund”.

Any transaction initiated from unsigned NETC FASTags will not be compensated from the “NHAI/IHMCL compensation fund” [effective once the signature validation process is implemented at the Plaza]

Identified Risk	Risk Analysis	Risk Handling
Hardware/Software Malfunction and Data theft	<ol style="list-style-type: none"><li>1. Remote access of hardware</li><li>2. Improper working of hardware [Reader/Lane Controller/ Plaza Server/AVC/CCTV Camera]</li><li>3. Data loss in event of malfunction or mishap</li><li>4. Ensure correct authentication of NETC</li></ol>	<ol style="list-style-type: none"><li>1. **All the servers, computers etc. at the Plaza must be hardened as per the process outlined in the document.</li><li>2. IHMCL/NHAI has provided mandatory guidelines and procedures for operation of NETC Lanes. The Plaza operator shall adhere to these guidelines.</li><li>3. Data backup and disaster management procedures are defined in the document. These</li></ol>

	<p>FASTags and securing of public keys</p> <p>5. Server Time synchronisation for all the stakeholders</p>	<p>shall be followed to mitigate the risk.</p> <p>4. **Correct key management procedures as per the document to be followed to mitigate the risk.</p> <p>5. All the servers and computers at Plaza which are participating in the NETC program must have time synchronised with the NETC system via Acquirer host.</p>
Network Connectivity	<p>1. Delayed reporting of transaction for processing in NETC system</p> <p>2. Eavesdropping during data transmission</p> <p>3. Message integrity and authenticity</p>	<p>1. The Plaza operator shall ensure the uninterrupted network connectivity so that transactions can be processed within defined TAT.</p> <p>2. **All the data transfer between Plaza server and Acquirer host shall be performed in an encrypted channel as per NETC network security guidelines.</p> <p>3. **All the messages shall be digitally signed considering correct key size as per the NETC security guidelines.</p>
Data backup	<p>1. The transaction data not available for the dispute processing</p>	<p>1. The data backup guidelines must be followed, and the data archives must be kept. The transaction data retention period shall be as per RBI guidelines.</p>

\*\*In case the Plaza systems are not as per the defined security guidelines which leads to fraudulent cloned NETC FASTag transaction. The liability of such proved fraudulent transactions will be compensated from “NHAI/IHMCL compensation fund” to the appropriate stakeholder.

### 5.1 Cloned NETC FASTag transactions

The transactions are said to be initiated from a cloned NETC FASTag if:

1. Multiple transactions processed for same NETC FASTag at two different Plazas in near time.
  - a. Time taken by the vehicle to travel from one Plaza to another is called “Near Time” if the speed at which the distance covered between the Plazas is greater than 120 km/hr.

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Speed = Distance between two different Plazas / Time taken by vehicle to travel the distance

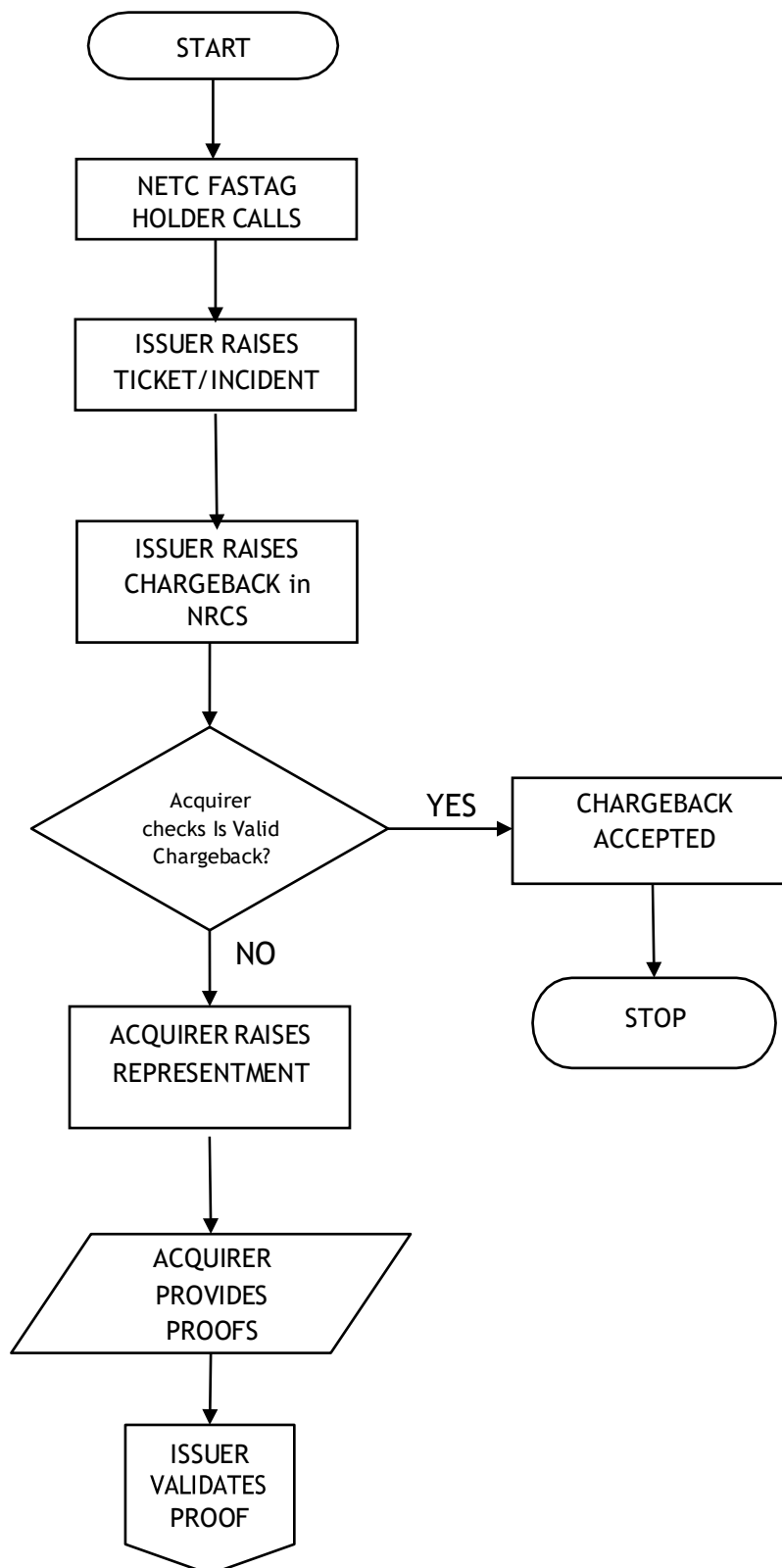
Let d be the distance between two Plazas and t be the time taken by the vehicle to travel d.

Therefore, Speed =  $d/t$ ;

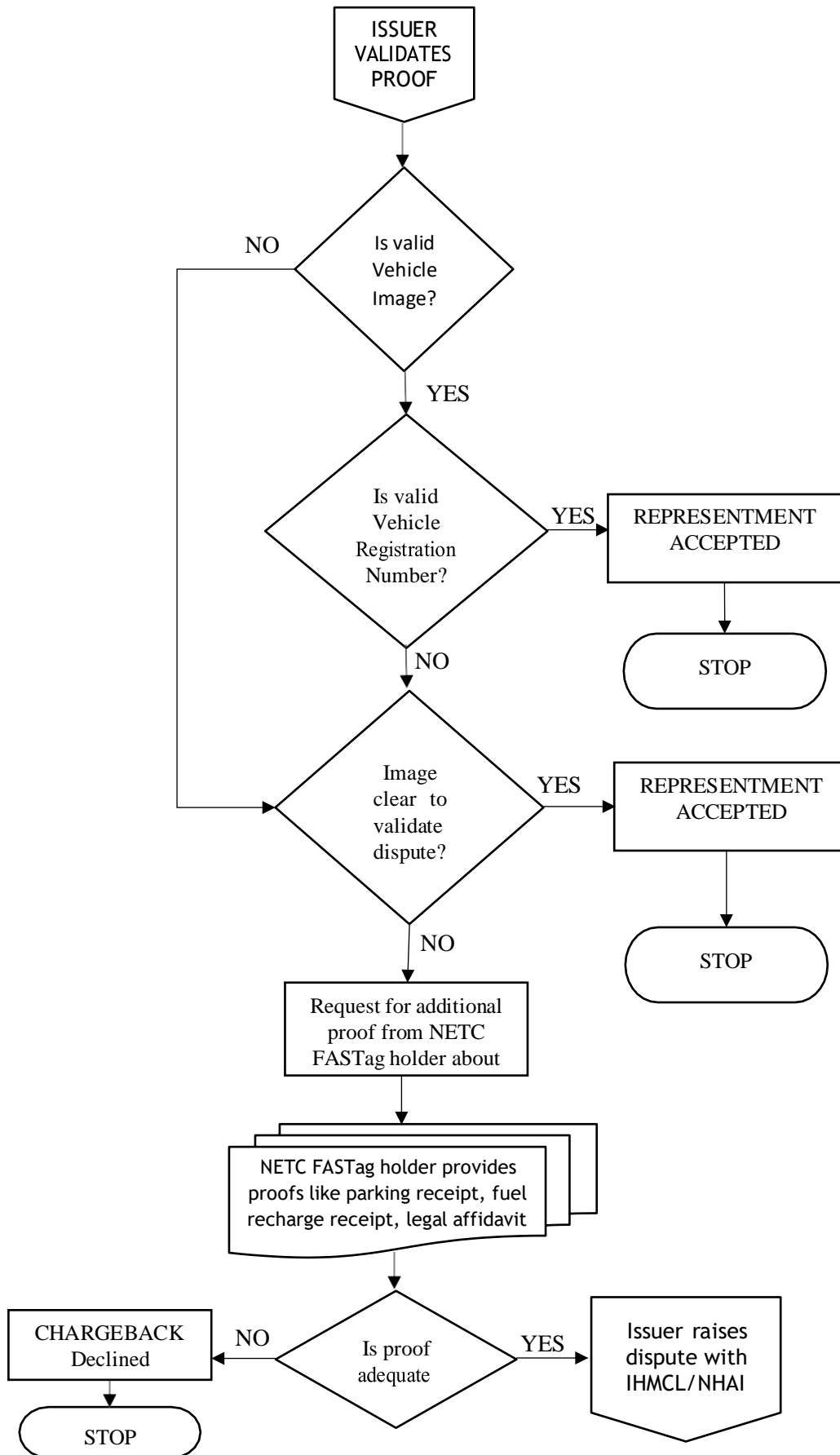
If Speed is greater than 120 km/hr then t is near time.

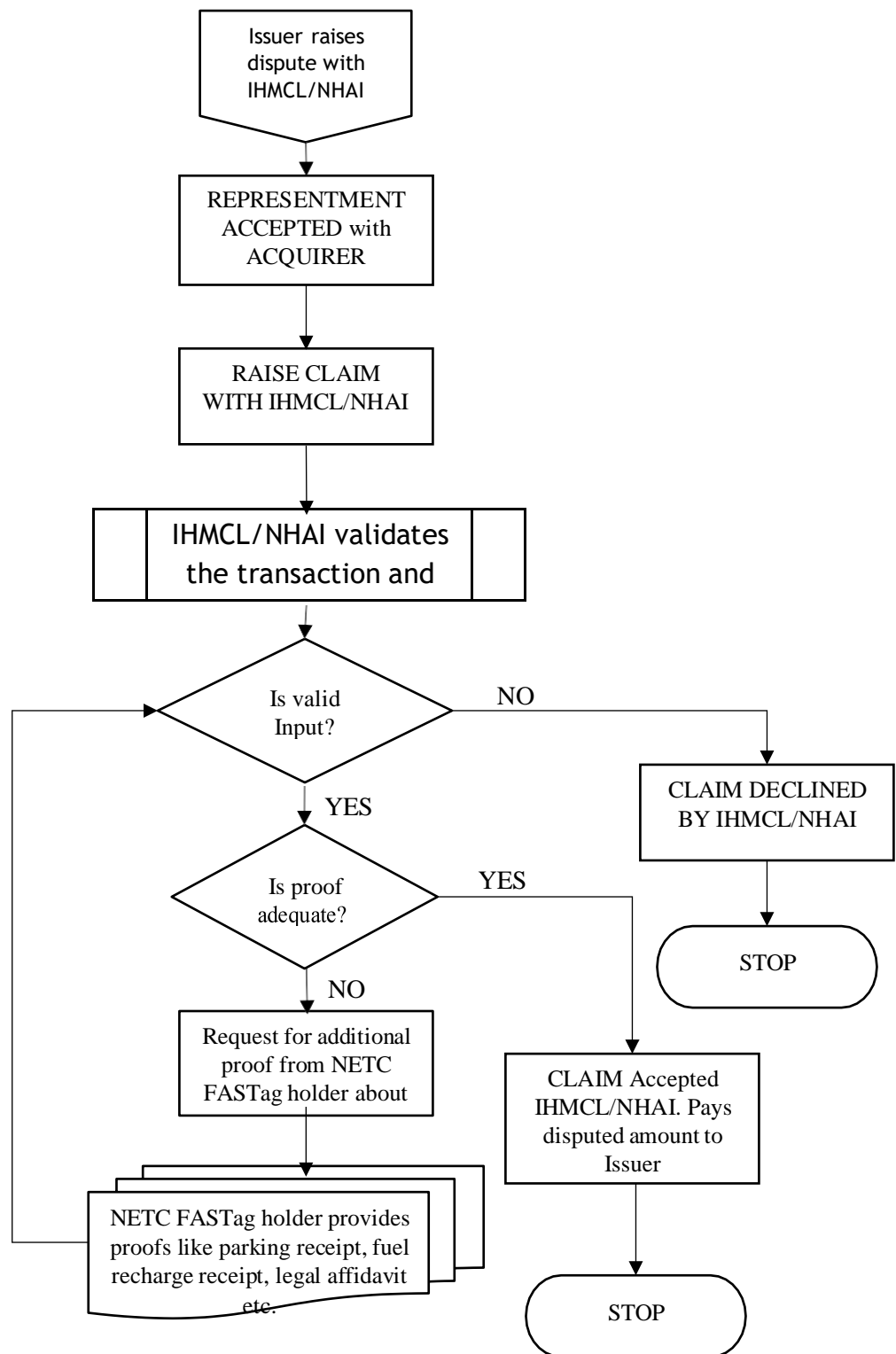
2. Service not rendered i.e. vehicle is proved to be located at different location as per defined near time rather than the Plaza at which the transaction has been initiated for the vehicle.
  - a. Any government organisations' receipt/documentation which contains the vehicle registration number on the receipt/documentation.
  - b. Any video/image of the vehicle with valid timestamp.

To safeguard the risk, IHMCL/NHAI has made provisions for the fraud fund and the claims of these fraudulent transactions will be performed by IHMCL/NHAI on case to case basis as per the process defined in flowchart below.









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## 6.0 User support at Plaza

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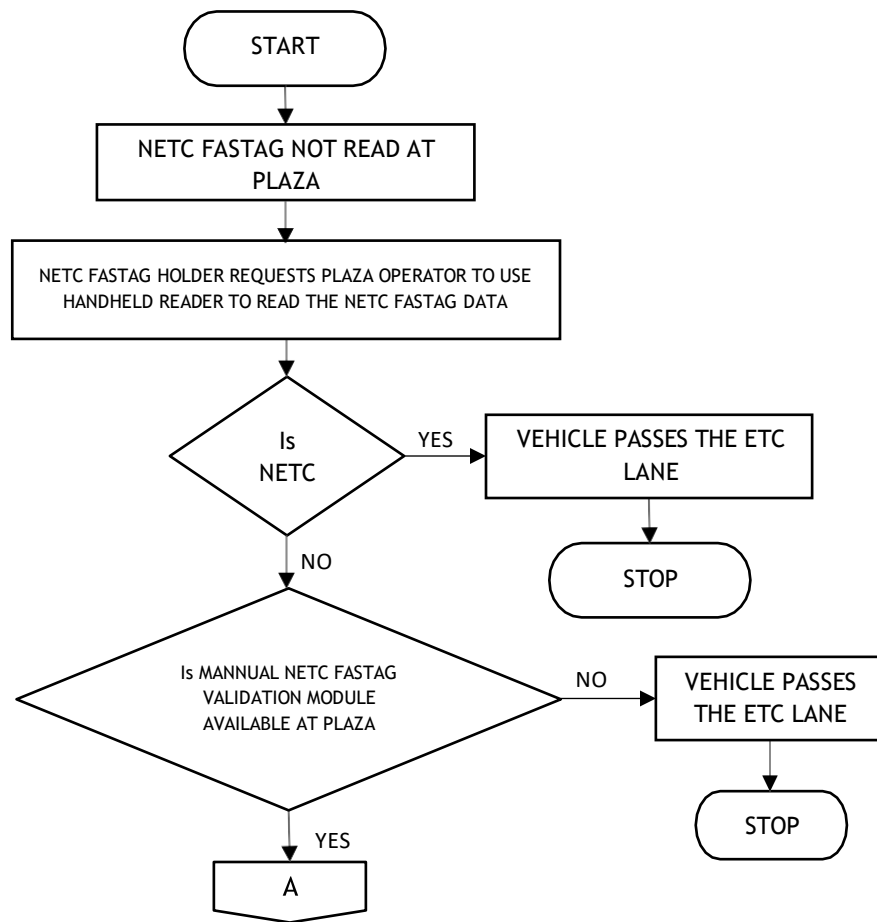
In case the NETC FASTag holder's NETC FASTag is not read at the Plaza and vehicle is not allowed to pass through the NETC lane, the Plaza operator has to abide to the following process to support the end user.

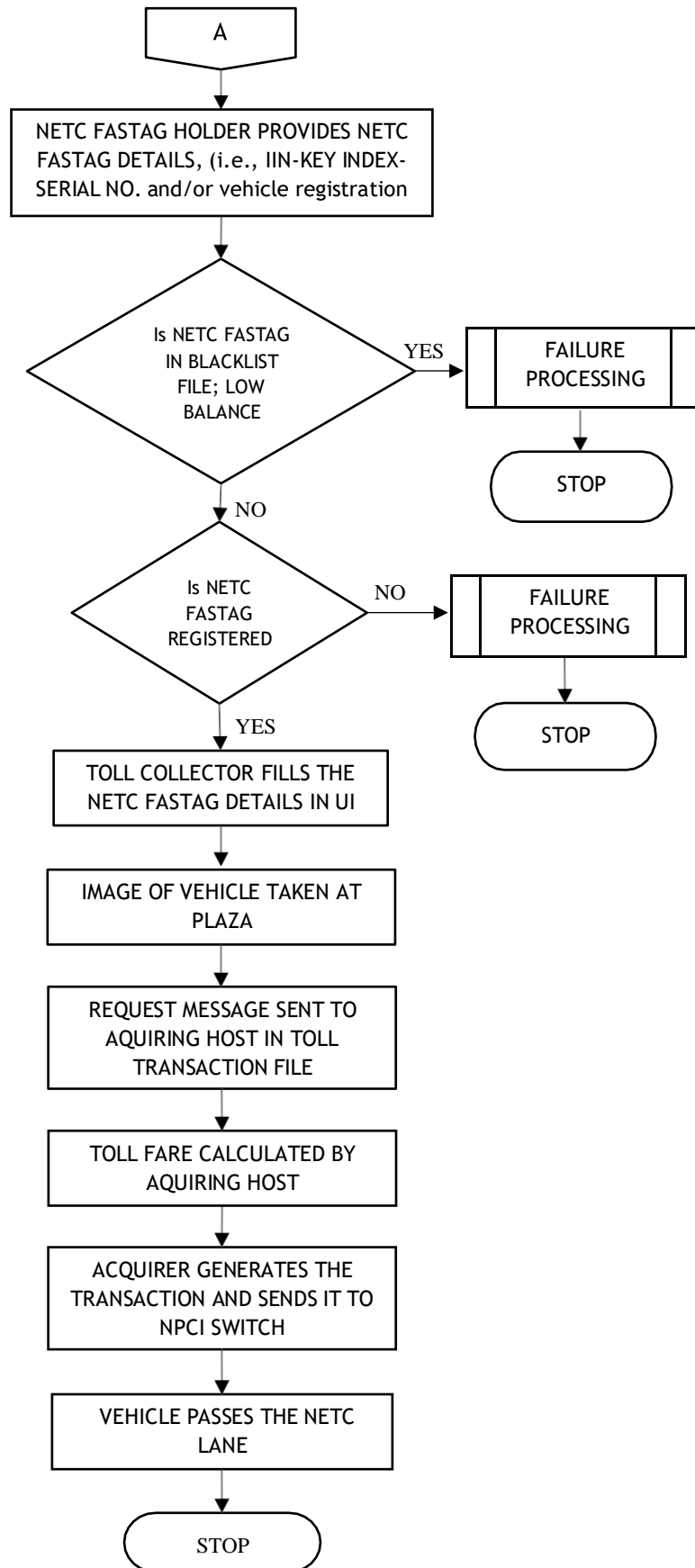
### 6.1 Pre-requisite

- NETC FASTag Holder is registered on NETC mapper with following provisions in place
  - The NETC FASTag affixed on the windshield of the vehicle issued by a valid Issuer must be used for the transaction
  - Correct vehicle registration number should be mapped to the NETC FASTag ID on NETC Mapper
- The NETC FASTag is linked to an active account by the Issuer

### 6.2 NETC FASTag Holder Complaint and transaction processing

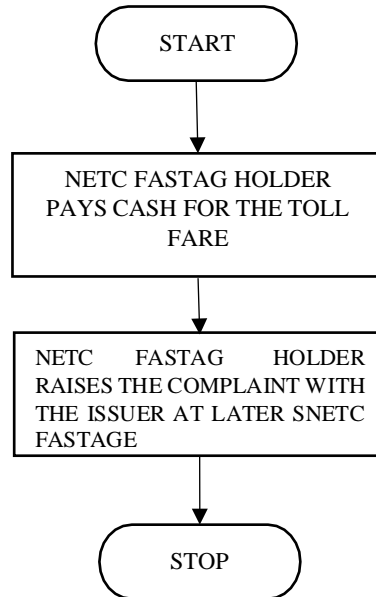
- User complaint can be processed at the Plaza as per the flowchart described below.
- Both Issuer and Acquirer should authenticate the root cause of the failure:
  - In case the NETC FASTag was not valid or correctly personalised the issuer, bank should replace the NETC FASTag at no additional cost to NETC FASTag holder within 48 hours of reporting such issue.
  - In case the Acquirer host system is not functioning, the Acquirer host should rectify the issues within 7 working days of identification of the issue. In case the Plaza system has the issue, then the Plaza operator should rectify the issues within 7 working days of identification of the issue. Acquirer should report the same to IHMCL/ NHAI.





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	FAILURE PROCESSING	
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## 7.0 Roles and responsibilities of Plaza Operator

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- Plaza operator has to enter into an agreement with an acquirer.
- Plaza Operator has to ensure the infrastructure required for providing the necessary transaction information as defined in section 3.2 “NETC Transaction - Payment and Settlement”
- The Plaza Operator has to abide by rules outlined by NHA and IHMCL to participate in NETC system for toll collection, including that of PG and circulars issued by NPCI.
- Plaza should process transactions as per the Interface control Documents specifications.
- The Plaza operator must ensure the connectivity between the Acquirer host and Plaza server is maintained as per the TAT.
- To send all the transactions which are executed at the lane controller to NETC system i.e. successful, fail, decline etc.
- The Plaza operator should support primary and secondary systems to ensure multiple connectivity with the acquirer host.
- The Plaza operator must adhere to the security standards outlined in the “Security and Risk management” section 8.0.
- Plaza Operator must ensure 24x7 working of Plaza server with proper disaster recovery. Plaza Operator must maintain the backup of transactional data, images, audit trails etc. for a period of one year. Ensure the generation of transactional messages as per specified format and transmit the payment transaction details to the acquirer.
- Plaza operators should provide evidence [i.e. AVC profile, Vehicle Image etc.] as and when required by Acquirer.
- The Plaza Operator must ensure that the Plaza server has the updated exception list and same needs to be updated to lane controller defined SLA in the deed of adherence.
- The Plaza operator should also provide the handheld readers as back up option in case the stationery reader in the NETC lane is not operational.

*Note:*

*Plaza operator may opt for a monitoring application which will notify real time status of all the components involved in the NETC process.*

Closed loop circuit: Electromagnetic Induction Circuit may be used at the NETC Lane to identify incoming & outgoing of a vehicle. This may also help the reader in reading the NETC FASTags on the vehicles in queue.

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## 8.0 Compliance for Plaza Operator

- a) Plaza Operator should ensure to transmit securely all the transaction processed records to the acquirer within specified TAT as per the SLA mentioned in Deed of Adherence (DOA).
  - b) The Plaza operator should provide minimum one dedicated lane in each direction for NETC.
  - c) Plaza Operator should have backup portable readers in case the NETC FASTag is not read by the fixed readers.
  - d) Maintaining the updated exception list at Plaza server.
  - e) Lane controller/ Plaza server should have the ability to detect multiple NETC FASTag affixed on the same vehicle
  - f) The Plaza operator should ensure all the NETC transactions which are received from lane controller should reach to NETC system through its acquirer within Fifteenminutes for online transaction processing and 3 days with limited liability as explained in the chapter 3, section 3.2 Failure scenarios.
- e.

(NETC system will decline the transactions which are received after the defined TAT)

- g) Plaza Operator should ensure that non-NETC FASTag vehicles are not allowed to pass through the NETC lanes. They should enforce the provision for laying a fine/penalty on such vehicles.
- h) Plaza operator should provide the required infrastructure for functioning of NETC lane.
- i) Plaza Operator should ensure the availability of NETC lane as per the IHMCL/NHAI guidelines.
- j) Plaza operator must maintain back up of transaction data, images, audit trails and any other information related to NETC transactions for the period of one year.
- k) Plaza operator has to abide by the policies and guidelines outlined by the NHAI/IHMCL.
- l) Plaza operator should ensure the periodic audit of NETC infrastructure.
- m) The image captured for NETC transaction should be clear as per the specification.
- n) Any fraud detected at Plaza for NETC transactions should be immediately reported to Acquirer for blacklisting.
- o) If it is found that valid NETC FASTag is not read at the NETC lane and Issuer provides evidence of precedence/subsequent transaction, then the Plaza has to pay the penalty per instance as decided by IHMCL/NHAI.
- p) The plaza operators/ concessionaires must ensure entry of complete vehicle registration number for non FASTag transactions as provisioned in the ETC system for all vehicles not fitted with FASTag or without valid, functional FASTag at the time of collection of user fee at NH fee plazas.
- q) The Plaza Operator must also capture an image of the license plate of such vehicle through the lane cameras and store for minimum period of dispute life cycle of the respective transaction.

IHMCL/NHAI should ensure the compliance of Plaza operators.

## 8.1 Audit

IHMCL/NHAI who is the program manager for NETC Payment System conducts audits of Toll Plazas.



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## 9.0 Plaza On-boarding and Off-boarding by Acquirer

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NETC transactions on the Plazas are sent to Acquirer for the purpose to transaction processing. In order to acquirer the Plaza the banks and the Plaza operators/concessioners needs to adhere to following process.

The NHAI Plaza Acquirer is categorised into two sections i.e.

- a. Acquirer of new Plaza
- b. Re-Acquirer of Plazas

### 9.1 Pre-requisite for Acquirer Plazas

- Plaza must be authorised by NHAI/IHMCL to operate the NETC lane
- Acquirer must be certified by NPCI for the NETC program
- Plaza must have operational NETC lane as per the guidelines provided the NHAI/IHMCL
- Acquirer and Plaza operator/concessioner must adhere to CCH ver. 2.4 for processing the NETC transactions.
- Plaza operator/concessions must provide a consent letter to the Acquirer for Acquirer the Plaza
- Acquirer must self-certify them based on the Plaza PoC test cases shared by NPCI.
- Provide the Plaza IDs to NPCI for on-boarding of Plaza on NPCI system

### 9.2 Acquirer of new Plazas

Any Plaza which has not initiated any NETC transaction using NETC FASTag is said to be a new Plaza i.e. cash lane might be operative but the NETC lane was not operative.

- The Acquirers must confirm that the NETC lane is operative as per the guidelines of NHAI/IHMCL.
- The connection to the NPCI system and the Plaza server must be established.
- The Acquirer must configure the toll fare calculation business rules, AVC mapping and pass fare rules on the Acquirer host system.

On successful completion of above activities, the Acquirers can plan the go-live schedule with NPCI and on the agreed date, NETC lane on the plaza can be effectively made to go-live.

### 9.3 Re-Acquiring of Plazas

A Member willing to acquire a Plaza which is already processing transaction from NETC lane through an Acquirer has to adhere to the process outlined in this sub-section.

- The new Acquirers must provide written confirmation on the start date. The obligations of the new acquirer will be in effect from the start date specified.

- 
- To facilitate the smooth roll over of the Acquirer system one hour of downtime will be allowed at the NETC lanes of the Plaza on an agreed date-time between existing acquirer, new acquirer, NPCI and Plaza operator. It will be the responsibility of the new acquirer to inform the switch-over to all the stakeholders.
  - Plaza operator/concessionaire must ensure that all the transactions initiated at the NETC lane before the switchover must be processed by the existing Acquirer. If Plaza operator/concessionaire has failed to process the transaction with the existing acquirer, then these unprocessed transactions will not be settled. It is the responsibility of the new acquirer to ensure the compliance and also get a confirmation from Plaza operator on the same.
  - The new Acquirer must configure the toll fare calculation business rules, AVC mapping and pass fare rules on the Acquirer host system.
  - The connection to the NPCI system and the Plaza server must be established by the new acquirer.
  - The new Acquirer must configure the details of existing pass schemes in the new Acquirer host.
  - The existing Acquirer must support all the stakeholders in settlement of the disputes raised by NETC FASTag holder in the settled transaction for the period of 6 months
  - The existing Acquirer must obtain a no objection certificate from the Plaza operators/ concessionaire and shall settle any pending amount within two months of the termination of the current contract

On successful completion of above activities, the Acquirers can plan the go-live schedule with NPCI and on the agreed date NETC lane on the plaza can be effectively made to go-live.

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## 10.0 Dispute Management process after roll over

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Any disputes raised for the transactions processed before the roll over date should be honoured by the previous acquirer and the Plaza operator.

Examples 1:

Transaction details [Before Rollover]

Plaza ID: 1234

Issuer ID: 111111

Existing Acquirer ID: 222222

New Acquirer ID: 333333

Transaction ID/RRN: NETCNOV00001234

Transaction Amount: INR100/-

CHARGEBACK [After Rollover]

Issuer “111111” raised a chargeback of INR25/- on acquirer “222222” for RRN “NETCNOV00001234”

Acquirer “222222” will process the chargeback raised by the issuer with Plaza “1234” as per guidelines defined NETC PG

*Note: The new Acquirer “333333” will not be party to this disputed transaction. As mentioned above the previous acquirer will be liable to resolve the dispute and have to support the entire dispute lifecycle defined in NETC PG*

Examples 2:

Transaction details [Before Rollover]

Plaza ID: 1234

Issuer ID: 111111

Existing Acquirer ID: 222222

New Acquirer ID: 333333

Transaction ID/RRN: NETCNOV00001234

Transaction Amount: INR100/-

DEBIT ADJUSTMENT [After Rollover]

Plaza operator has found vehicle class mismatch and is running short of money for transaction id “NETCNOV00001234”. The Plaza operator raises the debit adjustment with Acquirer “222222” of INR25/- The issuer “111111” account gets debited for said debit adjustment transaction.

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*Note: The new Acquirer “333333” will not be party to this disputed transaction. As mentioned above the previous acquirer will be liable to resolve the dispute and have to support the entire dispute lifecycle defined in NETC PG*

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## **PART III – Non-Tolling Use cases**

### **1.0 NETC Parking**

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#### **1.1 Introduction**

With the ever-growing vehicular ownership in India, Parking in major cities, has become one of the challenges for the people. Implementing an efficient and effective use of technology for managing parking and its payments has become one of the important smart city solution.

Smart parking systems are implemented by various city authorities/private players in the parking industry like Malls, Airports, etc. to manage the day to day operations. With multiple cities launching their smart parking projects there is a need for an interoperable solution. This is all the more important as we need to have interoperability across cities. There is a need for the users to use and pay for the parking space with a common digital payment mode which is accepted anywhere in India.

NETC FASTag program has been successfully running for the last 6 years and have managed to create a robust interoperable ecosystem for Tolling, it is but natural to extend the same ecosystem for Parking. Also due to various government mandates most of the vehicles visiting the Parking lots will be already fitted with a NETC FASTag.

#### **1.2 Objective**

The NETC ecosystem extended to parking use case will provide enhanced consumer experience by providing a contactless payment experience. It provides an opportunity to evolve a simple and robust framework which is secure, reliable, interoperable and capable of use across the country.

The key objective is to Leverage existing NETC system to enable smart parking payment through NETC FASTag.

#### **1.3 NETC Parking Payment System Model**

The NETC Parking system has the following stakeholders: -

##### **1.3.1 Concessionaire / Parking Plaza Operator:**

Provide hardware & Infrastructure for NETC Parking Payments

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### **1.3.2 Acquirer Bank**

- Will onboard merchants to facilitate NETC Parking Payments
- Initiate transaction and ensure authentication.
- Settlement & Reconciliation of funds to operator
- Manage dispute lifecycle on behalf of operator

### **1.3.3 NPCI**

- Identify or/and authenticate vehicle information.
- Provide provisioning for the Merchant & Plaza onboarding.
- Pricing & Settlement of transactions
- Act as a regulator and define compliance and standards for the NETC Parking ecosystem

### **1.3.4 System Integrators**

- Application Service Provider / Technology Service Provider will provide on-site services.
- Ensure compliance of the guidelines from competent authorities and process transactions within the defined parameters.

### **1.3.5 Issuer Bank**

- Manages the NETC FASTag life cycle for the consumer
- Acts as a single point of contact for user queries and complaints
- Comply with the settlement cycle of NETC

### **1.3.6 NHAI / IHMCL**

- Governing authority for implementing standards for FASTag

## **1.4 Roles & Responsibilities of NPCI**

NPCI owns the NETC system which comprises of NETC Switch, NETC Mapper and NETC Realtime Clearing & Settlement (NRCS) system. NPCI will perform the role & deliver the responsibilities in line with the the Tolling ecosystem.

The additional roles & Responsibilities w.r.t parking ecosystem will be

- To specify the procedural guidelines for the scheme management of NETC Parking and to ensure compliance with them.
- To certify acquiring banks & System integrators for NETC Parking through log and test scenario validation.
- To institutionalize IIN verification and Tag signature validation at all the Parking Plazas.

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## 1.5 Member Notification

NPCI would notify all the Members regarding:

- Amendments in the NETC - PG (Part 3 - Parking), NPCI may issue amendments to the NETC-PG (Part 3 - Parking) from time to time. The revised versions may also be issued incorporating new provisions periodically.
- New Amendments/software up-gradation/hardware released pertaining to NETC Parking System.
- All notification issued w.r.t NETC Parking shall be considered as part of procedural guidelines.
- Any other issues deemed important for the NETC Parking ecosystem.

## 1.6 NETC Parking Steering Committee

NETC Parking as a product will be part of the NETC Steering Committee. Please refer section 2.2 of Part 1 of this document for further details

## 1.7 Settlement Guarantee Mechanism

Please refer section 2.3 of Part 1 of this document

## 1.8 Pricing

NETC Parking transaction pricing for Issuer and NPCI will be decided in the Steering Committee / working group and communicated from time to time. The acquirer bank fee shall be variable and agreed between the bank and the respective merchant. Apart from Acquirer Fee, Issuer Interchange and NPCI switching fee, a PMF (Program Management Fee) component will be charged by IHMCL and the same will be communicated from time to time basis agreement in the Steering Committee Meeting / working group.

## 1.9 Acquirer

### 1.9.1 Roles & Responsibilities:

Acquirers shall integrate their systems with Parking Plaza operators / System Integrators for the purpose of acquirer transactions processed on the NETC lanes. Acquirer shall also integrate their system with NPCI's NETC system [NETC Switch and NETC Mapper] to process the transactions.

The acquirer's role w.r.t Parking plazas in addition to the ones explained in Part 1 are: -

- Acquirer must follow the specific modifications as per Parking approach document for parking transactions.
- Acquirer should ensure the latest list of IIN be updated at all the Parking Plazas before on-boarding them.

- 
- Acquirer should ensure proper User communication devices like Banners / Posters are placed at the entry and exit of the Parking Plaza before on-boarding the parking plaza so that the user is aware that the Parking is enabled with NETC FASTag payment mode.
  - Acquirer should ensure tag signature validation is implemented at the Parking Plaza before getting them on-boarded.

### **1.9.2 Integration with Plaza System**

The Parking Plaza operator will deploy a plaza server to process the NETC Lane transactions. Unlike tolling, for NETC Parking the NETC Lane will have only the following mandatory hardware including NETC RFID Reader, Boom Barrier, Fare Display and image capturing camera. Using this information received from the installed hardware from through the lane controller, an NETC transaction is initiated basis the fee and business rule set at the System Integrator end.

The Parking Plaza server will process the transactions and send it in the specified format (as per the ICD 2.5 document) to the Acquirer host system for transaction processing. A parking plaza can be acquired by a single bank at any point of time.

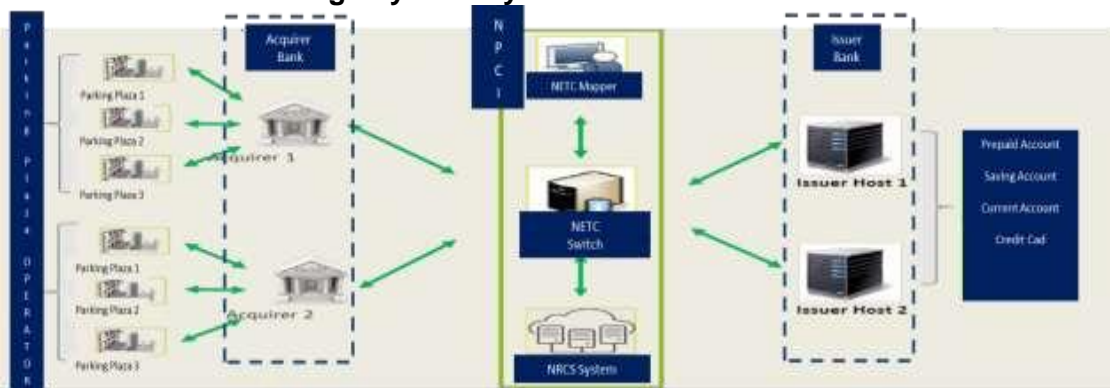
### **1.9.3 Integration with NETC System**

The Acquirer will integrate their host system with the NETC System (NETC Switch and NETC Mapper) hosted by NPCI. The acquirer has to ensure the transaction data is in the specified format as defined by the NETC API Technology Specification & Extract of Parking Approach document.

Unlike tolling, for Parking Plazas, the Acquirer host system does not store the business rules for fare calculation. The final fare is calculated by the System Integrator and the transaction is initiated for the final amount. On receiving the transaction information from the plaza server, the acquirer host will check the NETC FASTag status from the NETC Mapper and present the transaction messages to NETC switch for further processing. For unregistered NETC FASTags, i.e. NETC FASTag details not available in mapper, the acquirer should process the transaction as explained in section 3.2 of Part 1



### 1.9.4 NETC Parking Payment System Transaction Process



The above diagram illustrates the end-to-end flow of the NETC Parking payment system. Like the design of NETC solution, there can be multiple acquirers and multiple issuers in the eco system. Hence, the transactions from the acquirer host need to be routed to the respective Issuer to debit the NETC FASTag holder's account. This is achieved by central NETC System designed and deployed by NPCI which will be responsible for Acquiring all the Parking transactions from different acquirers and switching it to the respective Issuer.

#### Process Flow

1. All the data received from the NETC Lane i.e. RFID Reader (TID, NETC FASTag ID, usermemory etc.) & Image capturing device (image of the vehicle) are pushed to the Plaza Server (directly or through a lane controller).
2. The Plaza server will request the Tag details with the NETC FASTag ID through Acquirer host. Acquirer host will request the NETC mapper for NETC FASTag details. If NETC FASTag ID is present in the mapper, mapper will respond with the valid NETC FASTag details like, vehicle class information, Vehicle registration number, TID etc. If NETC FASTagID is absent in the mapper, mapper will respond that NETC FASTag is not registered.
3. Even if a valid NETC FASTag is not registered in NETC Mapper, the plaza operator has to be paid for the transaction (as the transaction processing is offline and the vehicle has already left the plaza). The Acquirer has to process the transaction with the fare calculated by the Plaza.
4. Plaza Server will process the information, apply the fare rule logic, Business rules etc to arrive at the Parking fee to be debited from the tag. The transaction data will then be sent to the Acquirer host.
5. Acquirer host will initiate a debit request to NETC system. NETC system will validate the NETC FASTag status in the exception list at the time of transaction initiation.

If the vehicle is marked with an exempted (02, 04) status, any financial transactions on the FASTag wallet associated with exempted tags will be restricted at the NPCI level. Users will be required to use alternative payment methods, as these tags will not hold any balance. *The issuer is liable for transactions up to 20 minutes of adding the NETC FASTag ids in the NETC exceptionlist.*

- 
6. NETC System shall forward the debit request to Issuer for debiting the account of the user.
  7. The issuer host will debit the linked NETC FASTag holder account and send a SMS alert to the NETC FASTag holder. The issuer host will send the response message to NETC System.
  8. NETC system will notify the response to the acquirer host.

The transaction processing between acquirer host, NETC switch, and Issuer host is always online. The transaction settlement between the acquirer and plaza operator will be as per the agreed timelines between acquirer and plaza operator, not exceeding T+1 [settlement day plus one]. All clearing & settlement will be processed through the NRCS system.

Failure Scenarios: - All the failure scenarios of NETC Parking transactions should be handled as detailed in the failure Scenarios section of Part 1.

#### **1.9.5 Compliance for Acquirer**

In addition to the compliances defined in Part 1, the following compliances should be followed by the acquirer for NETC Parking.

- Acquirer is responsible for ensuring compliance with any privacy-related regulations of the government which includes sharing of NETC Parking transaction information with any third party. Also, responsible for payment of all government taxes related to the NETC Parking project including the Fee payable to IHMCL.
- Acquirer must ensure the parking plazas adhere to the NPCI Interface Control Document(ICD) specifications and the Acquirer Bank must comply with the API Technology Specifications & changes to the APIs defined in API Technology Specification (Extract of Parking approach document) with respect to processing and acquiring of the plaza transaction.
- Acquirer must ensure the correct implementation /configuration / revision of the business rules from time to time.

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## **Prohibition to use NETC Logo/Trademark/Network**

- Upon termination of the NETC Membership, the Member should abstain from further use of the NETC trademark with immediate effect. Failure to comply with the same could invite legal proceedings.
- Members that have been suspended from NETC Membership would be deprived of the privilege to use “NETC” for any Parking transactions with immediate effect.
- Any pending dispute pertaining to Parking transaction errors not resolved before the Member is suspended will be recovered from the respective Member’s settlement account.
- The suspended Member would not disclose any information regarding the NETC network for Parking or any knowledge gained through participation in the NETC Parking scheme to outsiders. Failure to comply with the same would be treated as breach of trust and could invite legal penalties.

### **1.10 Issuer**

#### **1.10.1 Roles & Responsibilities**

In addition to the Roles and responsibilities defined in Part 1 for Issuer, following are the additions: -

- The Issuers should make the necessary changes in their issuer host to accommodate the requirements as defined in the “Extract of Parking approach document”.
- The Plaza type for NETC Parking transactions will be shared as “Parking” and the PlazaSub-Type will be shared as Open / closed. The issuers should ensure to process all such Parking transactions.

### **1.11 Operating procedure for Members**

Please refer Section 5.0 of Part 1 of this document

### **1.12 NETC Realtime Clearing & Settlement System (NRCS)**

NPCI clears the NETC Parking transactions through NETC Realtime Clearing and Settlement System (NRCS) designed to process transactions and dispute Resolution Process for the transactions processed through NRCS. The Technical specifications related to NRCS are covered under “NETC Clearing and Settlement & Dispute Management System Technology Specifications Document” & this document is shared with all Members from time to time.

Please refer section 6.0 of Part 1 of this document for detailed information

### **1.13 Reports**

The report generated and shared from NRCS system will have the identifier for Parking where the type of transaction will be mentioned as “Parking”.

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**1.14 Dispute resolution**

Please refer section 7 of Part 1 of this document for detailed information

**1.15 Security and Risk Management**

Please refer section 8 of Part 1 of this document for detailed information

**1.16 Administrative policies and procedures**

Please refer section 9 of Part 1 of this document for detailed information

**1.17 Compliance**

Please refer section 10 of Part 1 of this document for detailed information

**1.18 Certification**

Please refer section 11 of Part 1 of this document for detailed information

**1.19 Member On-boarding**

Please refer section 12 of Part 1 of this document for detailed information

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## 2.0 NETC EV Charging

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### 2.1 Introduction

NETC is a RFID form-factor based payment solution that was launched in 2016. Over the years we have successfully scaled this product at more than 1,600 plazas where more than 7.8 Cr. NETC holders can transact across India on National Highway Plazas, State Highway Plazas and Parking Plazas. To scale it up further, it is required to introduce new use cases.

The evolution of India's transportation landscape is undergoing a monumental shift towards sustainability, and Electric Vehicles (EVs) are at the forefront of this transformation. As a key enabler of this change, the National Electronic Toll Collection (NETC) FasTag system has now extended its capabilities to revolutionize EV charging payments. **On 7th September 2023**, NETC had showcased their pilot launch of EV Charging used case in the GFF 2023 (Global fintech festival 2023). The video showcased how a user can conveniently make payment for charging their EV vehicle through FASTag.

At present, a lot of closed loop EV Charging systems have been implemented by various players which has created a dependency on individual apps and wallets. Currently, there is a need for an interoperable solution for EV Charging. This is very crucial as we need to have interoperability between the charging operators for user convenience. There is a need for the user to use and pay for the EV Charging payments with a common payment mode which is accepted anywhere in India.

National Payments Corporation of India (NPCI) proposes to facilitate the EV Charging ecosystem by leveraging on National Electronic Toll Collection (NETC FASTag) platform. Majority of the toll-able 4 wheelers are part of the ecosystem.

### 2.2 Objective

The NETC ecosystem extended to EV Charging use case will provide enhanced consumer experience by proving a contactless payment experience. It provides an opportunity to evolve a simple and robust framework which is secure, reliable, interoperable and capable of use across the country.

The key objective is to Leverage existing NETC system to enable EV Charging payment through NETC FASTag.

### 2.3 NETC EV Charging Payment System Model

NETC EV Charging System has following stakeholders: -

#### 2.3.1 Charging Station/Plaza Operator: -

Provides hardware and Infrastructure for NETC EV Charging

#### 2.3.2 Acquirer Bank: -

- Will onboard merchants to facilitate NETC EV Charging Payments
- Initiate transaction and ensure authentication.

- 
- Settlement & Reconciliation of funds to operator
  - Manage dispute lifecycle on behalf of operator

#### **2.3.3 NPCI: -**

- Identify or/and authenticate vehicle information.
- Provide provisioning for the Merchant & Plaza onboarding.
- Pricing & Settlement of transactions
- Define compliance and standards for the NETC EV Charging ecosystem

#### **2.3.4 System Integrators: -**

- Application Service Provider / Technology Service Provider will provide on-site services
- Ensure compliance of the guidelines from competent authorities and process transactions within the defined parameters

#### **2.3.5 Issuer Bank: -**

- Manages the NETC FASTag life cycle for the consumer
- Acts as a single point of contact for user queries and complaints
- Comply with the settlement cycle of NETC

#### **2.3.6 NHAI / IHMCL: -**

- Governing authority for implementing standards for FASTag

### **2.4 Roles & Responsibilities of NPCI**

NPCI owns the NETC system which comprises of NETC Switch, NETC Mapper and NETC Realtime Clearing & Settlement (NRCS) system. NPCI will perform the role & deliver the responsibilities in line with the tolling ecosystem.

The additional roles & Responsibilities w.r.t EV Charging ecosystem will be: -

- To specify the procedural guidelines for the scheme management of NETC EV Charging and to ensure compliance with them.

### **2.5 Member Notification**

NPCI would notify all the Members regarding:

- Amendments in the NETC - PG (Part 3 - EV Charging), NPCI may issue amendments to the NETC-PG (Part 3 - EV Charging) from time to time. The revised versions may also be issued incorporating new provisions periodically.
- New Amendments/software up-gradation/hardware released pertaining to NETC EV Charging System.

- 
- All notifications issued w.r.t NETC EV Charging shall be considered as part of procedural guidelines.
  - Any other issues deemed important for the NETC EV Charging ecosystem.

## **2.6 NETC EV Charging Steering Committee**

NETC EV Charging as a product will be part of the NETC Steering Committee. Please refer section 2.2 of Part 1 of this document for further details

## **2.7 Settlement Guarantee Mechanism**

Please refer section 2.3 of Part 1 of this document

## **2.8 Pricing**

NETC EV Charging transaction pricing for Acquirer, Issuer and NPCI will be decided in the Steering Committee / working group and communicated from time to time. Apart from Acquirer Fee, Issuer Interchange and NPCI switching fee, a PMF (Program Management Fee) component will be charged by IHMCL and the same will be communicated from time to time basis agreement in the Steering Committee Meeting / working group.

## **2.9 Acquirer**

### **2.9.1 Roles & Responsibilities:**

Acquirers shall integrate their systems with Charging Plaza operators / System Integrators for the purpose of acquirer transactions processed on the charging lanes. Acquirer shall also integrate their system with NPCI's NETC system [NETC Switch and NETC Mapper] to process the transactions.

The acquirer has the overall responsibility of checking & controlling the activities of the Third-Party Processors and their Merchant/Operators/Retailers base. This includes:

- Control of the approval and review of Non-Tolling Entity, and the establishment of merchant fees.
- Registration of Third-Party Processors (TPP) is specific to each acquirer, and with separate registration process for each business relationship.
- Maintain Liabilities of all the TPP that includes all applicable documentation, settlement guaranty, etc through appropriate controls.
- Identify each TPP and designate the activities that it is authorized to perform on the acquirer's behalf.
- Guarantee that the acquirer and its TPPs will comply with NPCI requirements for the use of the Entity.
- Acquirers to accept responsibility for any and all losses caused by its TPPs.
- The acquirer should have a clear policy of the portfolio mix of its Entity and the risks the acquirer is, or is not, ready to undertake while on-boarding new Entity.

- 
- Compliance to NPCI Operating guidelines and Brand Guidelines
  - Ensuring risk evaluation for 'Fraud Risk' and 'Business Risk' risk associated with underwriting.
  - Process FASTag transactions and to pay the Entity for the processed transactions within T + 1 day.
  - Store and maintain all FASTag transaction data for a minimum period of 10 years.
  - Support primary and secondary systems to ensure connectivity with multiple endpoints.
  - Transmit the completed transaction records to the issuer in order to obtain the settlement within the defined TAT.
  - Keep the image files provided by the parking operators [i.e., AVC profile, Vehicle Image etc.] for a period of one year.
  - Assist the disputes raised by Issuer or Entity. The acquirer is responsible for the resolution of disputes as per the applicable TAT.
  - Providing support and helpdesk to the Entity
  - Providing undertaking to IHMCL as mentioned in Annexure-1
  - Requisite support and action for dispute resolution and grievance redressal for all disputes pertaining to their parking lots.
  - The Acquirer bank shall be obligated to share the Data as and when required and called for by IHMCL including but not limited to providing any Information sought by MoRTH/NHAI/IHMCL or by any other agency required to have access to such data under any applicable law in force.
  - The Acquirer Bank shall provide all transaction data on post-settlement as and when required by IHMCL.

### **2.9.2 Integration with Plaza System**

The Charging Plaza operator will deploy a plaza server to process the transactions. The charging plazas will have only the following mandatory hardware including NETC RFID Reader, Fare Display and image capturing camera. Using the information received from the installed hardware, an NETC transaction is initiated based on the fee and business rule set at the SystemIntegrator end.

The EV Charging Plaza server will process the transactions and send it in the specified format (as per the ICD 2.5 document) to the Acquirer host system for transaction processing. A parking plaza can be acquired by a single bank at any point of time.

### **2.9.3 Integration with NETC System**

The Acquirer will integrate their host system with the NETC System (NETC Switch and NETC Mapper) hosted by NPCI. The acquirer has to ensure the transaction data is in the specified format as defined by the NETC API Technology

Specification & Extract of EV Charging document.

Unlike tolling, for EV Charging, the Acquirer host system does not store the



business rules for fare calculation. The final fare is calculated by the System Integrator and the transaction is initiated for the final amount.

On receiving the transaction information from the plaza server, the acquirer host will check the NETC FASTag status from the NETC Mapper and present the transaction messages to NETC switch for further processing. For unregistered NETC FASTags, i.e. NETC FASTag details not available in mapper, the acquirer should process the transaction as explained in section 3.2 of Part 1

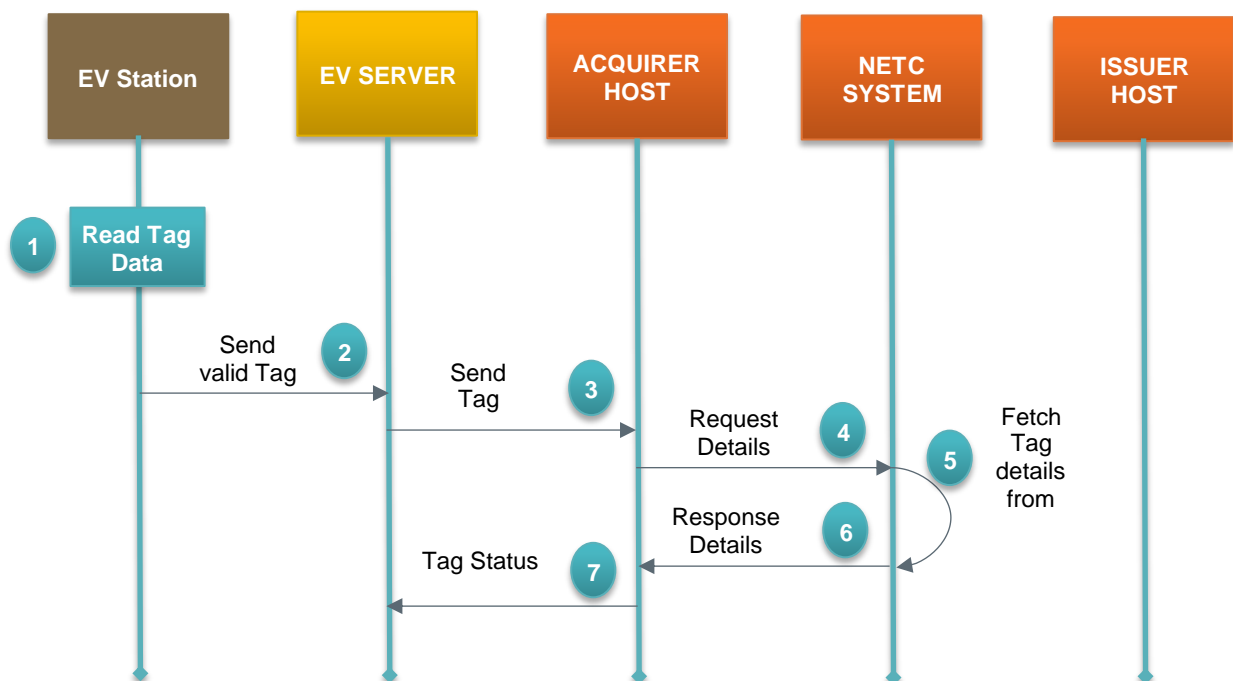
#### 2.9.4 NETC EV Charging Payment System Transaction Process

In existing NETC ecosystem, on receipt of Toll transactions from the plaza operator Acquiring Bank sends a debit request to NETC switch through Request pay API with merchant type mentioned as “Toll”. For EV Charging, Acquiring Bank will use the same API except with change in the merchant type as “EV” and including applicable values for elements in the message sample values mentioned for an EV transaction in data validation table (mentioned later in document) for the said API.

##### NETC Transaction Flow

The transaction processing flow is divided into two parts -

##### Transaction Flow after docking the Charging gun



Above image illustrates the transaction flow of EV charging after user docks the charging gun in the vehicle.

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The flow is between the EV Charging Station, Acquiring Host, NETC Host.

- 4.1.1.1 Once the user docks the EV charging gun in the vehicle, the station will perform following: -
  - a. RFID Reader will capture the RFID details & validate the GS1 details of the RFID tag.
  - b. Image capturing camera will capture the vehicle image.
- 4.1.1.2 EV Charging Station will send valid Tag details to the EV Charging Station server.
- 4.1.1.3 EV Charging Station server will send the Tag details to Acquiring Bank for Tag status.
- 4.1.1.4 Acquiring host will use request details API to retrieve tag details from the NETC mapper.
- 4.1.1.5 NETC system will fetch the Tag details i.e. Vehicle class, VRN, Tag status, Issue Date, Exception code, Bank ID, Commercial Vehicle Flag that are present in the mapper against the particular Tag ID.
- 4.1.1.6 The response for tag details fetched are sent back to the Acquirer host by NETC system.
- 4.1.1.7 Acquirer will send the Tag details to EV Charging Station Server for validation of unregistered Tag and Tag Exception

#### **Transaction Flow after receiving tag details**

Below Image, illustrates the transaction flow after receiving tag details between the EV Charging Station, Acquiring Host, NETC Host and Issuer Host.

1. Tag details are received by station
2. EV Charging Station server will check the exception status for the Tag.
  - a. Active (00) - The user will be allowed to pay using NETC.
  - b. Exempted (02, 04) or Closed (06) - If the vehicle is marked with an exempted status, any financial transactions on the FASTag wallet associated with exempted tags will be restricted at the NPCI level. Users will be required to use alternative payment methods, as these tags will not hold any balance.
  - c. Hotlist (01), Low Balance (03), Blacklist (05)- The user will be asked to recharge the tag.
3. Once the charging stops or user interrupts charging, the EV Charging Station will perform fare calculation basis consumption of electricity units.
4. After fare calculation is done, the EV Charging Station will send the transaction to Acquirer Bank host for settlement.
5. Acquiring Bank will send an acknowledgement to the EV Charging Station server
6. Acquiring host will send a request for tag details from the NETC mapper using Tag ID, TID.
7. NETC system will fetch the Tag details i.e. Vehicle class, VRN, Tag status, Issue Date, Exception code, Bank ID, Commercial Vehicle Flag that are present in the mapper against the particular Tag ID.
8. The response for tag details fetched are sent back to the Acquirer host.
9. Acquirer Bank shall forward the debit request to NETC system.

- 
10. NETC system will forward the user debit request to respective issuer bank.
  11. Issuer host will validate the user details & debit will be posted to respective user account.
  12. The issuer host will send the debit response to NETC system.
  13. Post receipt of the debit response, the NETC system shall send the response to Acquirer Bank.

#### **2.9.5 Compliance for Acquirer**

In addition to the compliances defined in Part 1, the following compliances should be followed by the acquirer for NETC EV.

- Acquirer is responsible for ensuring compliance with any privacy related regulations of the government which includes sharing of NETC EV Charging transaction information with any third party. Also, responsible for payment of all government taxes related to the NETC EV Charging project including the Fee payable to IHMCL.
- Acquirer has to ensure the parking plazas adhere to the NPCI Interface Control Document(ICD) specifications and the Acquirer Bank has to comply with the API Technology Specifications & changes to the APIs defined in API Technology Specification (Extract of Parking approach document) with respect to processing and acquiring of the plaza transaction.
- Acquirer should ensure the correct implementation /configuration / revision of the businessrules from time to time.

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### **Prohibition to use NETC Logo/Trademark/Network**

- Upon termination of the NETC Membership, the Member should abstain from further use of the NETC trademark with immediate effect. Failure to comply with the same could invite legal proceedings.
- Members that have been suspended from NETC Membership would be deprived of the privilege to use “NETC” for any EC Charging transactions with immediate effect.
- Any pending dispute pertaining to EV Charging transaction errors not resolved before the Member is suspended will be recovered from the respective Member’s settlement account.
- The suspended Member would not disclose any information regarding the NETC network for EC Charging or any knowledge gained through participation in the NETC EV Charging scheme to outsiders. Failure to comply with the same would be treated as breach of trust and could invite legal penalties.

## **2.10 Issuer**

### **2.11 Roles & Responsibilities**

In addition to the Roles and responsibilities defined in Part 1 for Issuer, following are the additions: -

- The Issuers should make the necessary changes in their issuer host to accommodate the requirements as defined in the “Draft of Extract of EV Charging approach document”.
- The Plaza type for NETC EV Charging transactions will be shared as “EV” and the PlazaSub-Type will be shared as DC FAST. The issuers should ensure to process all such transactions.

### **2.11 Operating procedure for Members**

Please refer Section 5.0 of Part 1 of this document

### **2.12 NETC Realtime Clearing & Settlement System (NRCS)**

NPCI clears the NETC Parking transactions through NETC Realtime Clearing and Settlement System (NRCS) designed to process transactions and dispute Resolution Process for the transactions processed through NRCS. The Technical specification related to NRCS are covered under “NETC Clearing and Settlement & Dispute Management System Technology Specifications Document” & this document is shared with all Members from time to time.

Please refer section 6.0 of Part 1 of this document for detailed information

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### **2.13 Reports**

The report generated and shared from NRCS system will have the identifier for Parking where the type of transaction will be mentioned as “EV”.

### **2.14 Dispute resolution**

Please refer section 7 of Part 1 of this document for detailed information

### **2.15 Security and Risk Management**

Please refer section 8 of Part 1 of this document for detailed information

### **2.16 Administrative policies and procedures**

Please refer section 9 of Part 1 of this document for detailed information

### **2.17 Compliance**

Please refer section 10 of Part 1 of this document for detailed information

### **2.18 Certification**

Please refer section 11 of Part 1 of this document for detailed information

### **2.19 Member On-boarding**

Please refer section 12 of Part 1 of this document for detailed information

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## **Annexures**

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## **Annexure – I: Definitions and Abbreviations**

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### NETC RFID Acronym

- AVC Automatic Vehicle Classification
- AVI Automatic Vehicle Identification
- EDI Electronic Data Interchange
- NRCS NETC Real-time Clearing and Settlement
- EPC Electronic Product Code
- NETC National Electronic Toll Collection
- GUI Graphical User Interface
- IHMCL Indian Highway Management Company Limited
- ISO International Organisation for Standards
- kbps kilobits per second - a unit of speed of data communication
- MHz Megahertz - a unit of frequency of a signal
- MIS Management Information System

- 
- MOP Method of Payment
  - NHAI National Highway Authority of India
  - NPCI National Payments Corporation of India
  - RBI Reserve Bank of India
  - RFID Radio Frequency Identification
  - RFU Reserved for Future Use
  - RTGS Real Time Gross Settlement System.
  - RVR Reader Verification Result
  - SFTP Secured File Transfer Protocol
  - SGF Settlement Guarantee Fund
  - TID Transducer ID
  - TPO Toll Plaza Operator
  - UHF Ultra High Frequency
  - WIM Weight in Motion



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## NETC RFID Glossary

### A

**Active NETC FASTag:** An RFID NETC FASTag that uses a transmitter to return information as opposed to reflecting a signal back from the reader as many passive NETC FASTags do. Most active NETC FASTags are battery powered, though they may gather energy from other sources.

**Acquirer:** The bank that processes NETC transactions on behalf of Plaza Operator.

**Agile Reader:** An RFID reader that reads NETC FASTags operating at different frequencies or using different methods of communication between RFID NETC FASTag and reader.

**Antenna:** The conductive element to send and receive NETC FASTag data.

### B

**Backscatter:** RFID NETC FASTags using backscatter technology reflect radio waves at the same carrier frequency back to the NETC FASTag reader, using modulation to transmit the data.

### C

**Circular-Polarized Antenna:** A UHF reader antenna that produces radio waves in a circular pattern. As the waves move in a circular pattern, they have a better chance of being received, though circular polarized antennas have a shorter read range than linear-polarized antennas.

**Commissioning:** The process of writing a serial number by the manufacturer on to a NETC FASTag and associating that number with the Tagged product in a database.

**Compliance Label:** A label that indicates conformance to industry standards for data content and format.

**Concentrator:** A device that communicates with several RFID readers for the purpose of gathering data, which it then filters and passes on the information to a host computer.

**Concessionaire:** - A firm that operates the business within the Plazas belonging to another (the grantor) under a concession, usually a Plaza operator who manages the toll related services at the highways.

### D

**Data Transfer Rate:** Number of characters that can be transferred from an RFID NETC FASTag to a reader over a specified time. Baud rate defines how quickly readers can read information on an RFID NETC FASTag, and is different from read rate, which refers to how many NETC FASTags can be read over a specified time.

**Dead NETC FASTag:** An RFID NETC FASTag that cannot be read by a reader.

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Documents as proof in dispute: NETC electronic logs (generated by the Plaza Server, Acquirer Host, Issuer Host, Mapper etc.) for the disputed transaction uploaded in the form of scanned file or image.

Digital Signature: A digital signature is mathematical scheme for demonstrating the authenticity of digital message or documents. A valid digital signature gives the recipient reason to believe that the digital message was created by the known sender and the sender cannot deny of having sent the message. Also, the integrity of the message is ensured i.e. message is not altered in the transit.

Dumb Reader: A NETC FASTag reader with limited computing power that converts radio waves from a NETC FASTag into a binary number, passing it to a host computer with little or no filtering.

## E

NETC Realtime Clearing and Settlement (NRCS): When an NETC FASTag owner uses his NETC FASTag on the toll booths, the Acquirer institution reimburses the Plaza operator for the successful transaction. The Acquirer institution then settles the transaction related funds with the RFID NETC FASTag Issuer by submitting the transaction to NPCI. The NETC transaction would be done through RFID technology. The movement of transaction data from Acquirer institution to NPCI and from NPCI to issuing institution and vice versa is called Clearing. The movement of funds between Acquirer, Issuer and NPCI for the day is called Settlement. The process of clearing & settlement between Members would be handled by NRCS System.

Electronic Product Code: A serial number created by the Auto-ID Centre that will complement barcodes. The EPC identifies the manufacturer, product category and individual item.

Encryption: Altering data so that it cannot be read by those for whom it is not intended. In RFID systems encryption is used to protect stored information or to prevent the interception of communications between RFID NETC FASTag and reader.

EPC Generation 2: The standard ratified by EPC Global for the air-interface protocol for the second generation of EPC technologies.

EPC Global: A non-profit organization set up by the Uniform Code Council and EAN International, the two organizations that maintain barcode standards, to commercialize EPC technology.

## F

Factory Programming: Some read-only RFID NETC FASTags must have their identification number written into the microchip at the time of manufacture. This is known as factory programming. That data cannot be overwritten or modified.

False Read: When a NETC FASTag reader reports the presence of an RFID NETC FASTag that does not exist. Also called a phantom transaction or false read.

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**Fixed Reader:** An RFID interrogator mounted to a permanent or non-mobile structure enabling users to read RFID NETC FASTag numbers attached to movable items.

H

**Harvesting:** The way passive RFID NETC FASTags gather energy from RFID reader antennas.

I

**Interoperability:** The ability for RFID NETC FASTags and readers from different vendors to communicate. Interoperability testing assesses the ability of different systems to exchange information and use the data that has been exchanged.

**Interrogation Zone:** Area in which a NETC FASTag reader can provide enough energy to power up a passive NETC FASTag and receive back information. Also known as the read field or reader field. RFID NETC FASTags located outside the interrogation zone do not receive enough energy from the reader to produce a signal.

**ISO 10536:** International standard for proximity cards.

**ISO 14443:** International standards for proximity smart cards.

**ISO 15693:** International standard for vicinity smart cards.

**ISO 18000:** International standards for the air interface protocol used in RFID systems for Tagging goods in a supply chain.

**ISO 7816:** International standards covering smart cards physical and electrical characteristics and communication protocols.

**ISO/IEC 24730:** Standard that defines two air interface protocols and a single application program interface (API) for real-time locating systems (RTLS) for asset management. It is intended to allow for compatibility and encourages interoperability of products for the growing RTLS market.

**Isotropic:** Isotropic antennas radiate energy equally in all directions.

**Issuer:** The bank which issues RFID NETC FASTags to the user.

**Linear-Polarized Antenna:** An antenna designed to focus radio energy from the reader in one orientation or polarity, thereby increasing the read distance and providing increased penetration through dense materials. In order to be read accurately, RFID NETC FASTags designed to be used with a linear polarized antenna must be aligned with the reader antenna.

M

**Member:** All the banks or entities participating in NETC network either as an Issuer or Acquirer.

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## N

**NETC Services:** The services provided by NPCI for transaction switching, NETC Mapper for registration of NETC FASTag and processing clearing and settlement between Members

**NPCI:** It is an umbrella organization for all retail payments system in India. It was set up with the guidance and support of the Reserve Bank of India (RBI) and Indian Banks' Association (IBA).

**Near-Field Communication (NFC):** RFID NETC FASTags closer than one full wavelength away from the NETC FASTag reader are said to be "near field," while those more than one full wavelength away are "far field." Near field signals decay as the cube of the distance from the antenna, while far field signals decay as the square of distance. Passive RFID NETC FASTags that use far field communications (UHF and microwave systems) have a longer range than NETC FASTags using near field communications (low- and high-frequency systems).

**Nominal Range:** The read range at which at which an RFID NETC FASTag can reliably be read.

**Null Spot:** An area in the RFID NETC FASTag reader field that does not receive radio waves.

## O

**One-Time Programmable NETC FASTag:** It is the RFID NETC FASTag memory that can be programmed once and is then write-protected. After the memory is written to it is considered read-only memory.

**Orientation:** Position of a reader antenna in reference to a NETC FASTag antenna. In UHF systems reader antennas can be linear- or circular-polarized. When using a linear polarized antenna, the NETC FASTag and reader must be in alignment to achieve the maximal reading distance.

## P

**Passive NETC FASTag:** RFID NETC FASTags lacking a power source and transmitter are powered by radio waves from the reader that are converted by the NETC FASTag antenna into current.

**Portal:** An RFID interrogator gateway where Tagged items are moved through a portal reader to collect RFID NETC FASTag data.

**Programming a NETC FASTag:** The act of writing data to an RFID NETC FASTag. When a serial number is first written to a NETC FASTag it is called "commissioning".

## R

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**Radio Frequency Identification (RFID):** A technique for identifying unique items using radio waves. Typically, a NETC FASTag reader communicates with an RFID NETC FASTag, which contains digital information.

**Read:** The process of retrieving RFID NETC FASTag data by broadcasting radio waves at the NETC FASTag and converting the waves the NETC FASTag returns to the NETC FASTag reader into data.

**Reader:** A reader is a device installed at the Plaza which reads the NETC FASTag data and signature for NETC FASTag authentication.

**Read Range:** The distance from which NETC FASTag readers can accurately and reliably communicate with RFID NETC FASTags. Active NETC FASTags have longer read ranges than passive NETC FASTags because they have their own power source for signal transmission. In passive NETC FASTags the read range is controlled by frequency, reader output power, antenna design, and the method used to power up the NETC FASTag.

**Read Rate:** A specification describing how many NETC FASTags can be read within a given period or the number of times a single NETC FASTag can be read within a given period. Alternatively, the maximum rate that data can be read from a NETC FASTag expressed in bits or bytes per second.

**Read-Only:** RFID NETC FASTag memory that cannot be altered unless the microchip is reprogrammed.

**Reader Field:** The area a NETC FASTag reader can cover. NETC FASTags outside the field do not receive radio waves emitted by the NETC FASTag reader and cannot be read.

**Reader Talks First:** A passive UHF reader initially communicates with RFID NETC FASTags in its read field by sending energy to the NETC FASTags. The NETC FASTags do not transmit until the reader requests them to do so.

**Reverse Channel:** The path energy travels from the RFID NETC FASTag to the interrogator, or reader. It is also sometimes called the back channel.

**RFID NETC FASTag:** A microchip attached to an antenna and packaged so that it can be attached to an object. Programmed with a unique serial number, an RFID NETC FASTag receives signals from a NETC FASTag reader and sends signals back to the reader. RFID NETC FASTags can be active, passive or semi-passive.

## S

**Settlement Account:** It means the Deposit Account Department (DAD) account of the Member at the Reserve Bank of India (RBI) that will be utilized to settle payments for all NETC transactions.

**Settlement Period:** It is the period between two NETC Switch cutovers. Cutover will be initiated at 23.00 each day.

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Settlement Guarantee Fund (SGF): Funds contributed by banks to guarantee settlement of Payments made on their behalf by other banks.

Skimming: Reading an RFID NETC FASTag covertly.

Smart Reader: A reader that can filter data, execute commands and perform functions similar to a personal computer.

Synchronization: Process of controlling the timing of NETC FASTag readers that are close together, so they don't interfere with one another during the read process.

## T

NETC FASTag: A microchip attached to an antenna and packaged so that it can be attached to an object. The RFID NETC FASTag receives signals from a NETC FASTag reader and sends signals back to the reader. RFID NETC FASTags can be active, passive or semi-passive. Passive RFID NETC FASTag would be used in NETC implementation in India.

NETC FASTag Owner: Users who purchase the NETC FASTag from the Issuing Bank to affix it on their vehicles.

NETC FASTag Talks First: How NETC FASTag readers in a passive UHF system identify NETC FASTags in their field. When RFID NETC FASTags enter the reader's field they immediately announce their presence by reflecting back a signal, which is useful in an environment where items are moving quickly.

Plaza operator: A person or an entity who collects or registers tolls.

Transceiver (Reader): A device that both transmits and receives radio waves.

Transponder: RFID NETC FASTags are sometimes referred as transponders because they can be activated when they receive a predetermined signal. Unique Identifier is the unique serial number that identifies a transponder

## U

Ultra-High Frequency (UHF): The frequency band from 300 MHz to 3 GHz. RFID NETC FASTags typically operate between 866 MHz to 960 MHz, so they can send information faster and farther than high- and low frequency NETC FASTags

## V

Validation: A process by which a reader verifies the RFID NETC FASTag affixed on the vehicle.

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## Annexure – II: Application for Membership of Electronic Toll Collection (NETC)

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<<On the Letter Head of the Applicant Member>>

Date:

To,

National Payments Corporation of India

1001A, B Wing, 10th Floor, “The Capital”

C 70, G Block, Bandra Kurla Complex,

Bandra (East), Mumbai 400 051.

Maharashtra, India.

Subject: Application of Membership for National Electronic Toll Collection (NETC)

Dear Sir,

We would like to participate in the National Electronic Toll Collection (NETC) program and agree to abide by the Terms & Conditions stipulated thereof.

Kindly take a note of details provided below:

Name of the Participant Member	
Address	
Participating as Issuer/ Acquirer / Both	
NETC Project Contact Person Name	
Telephone Number	
Email ID	
Details of third party Vendor (If applicable)	
Location of the Switch/Server	
Contact person for Switch/Server/ IT	

Telephone Number	
Email Id	

The above application is being made under the authority of our board and certified true copy of the board resolution will be submitted once we receive an in-principle approval from NPCI.

Authorized signatory

(Sign & Stamp)

Name:

Designation:

Date:

Place:

Annexure to Membership Form

Applicant Member's Name:

Sr. No.	Description	Please tick one or more or enter the value			Remarks
Details					
1	a) Projected toll/NETC FASTag holder sign up count	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	
	b) Projected Throughput Volume (in Cars)	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	



	c) Projected NETC transactions count	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	
2	For NETC FASTag Issuing Bank				
	Name of NETC FASTag Provider				
	NETC FASTag Inventory Location				
	NETC FASTag Inventory Security Details	(Optional)			
	NETC FASTag Distribution Security Details	(Optional)			
3	For Plaza Acquirer				
	Name of Plaza Acquired	(Optional)			
	Plaza Location	(Optional)			
	Plaza ID	(Optional)			
	Server Location	(Optional)			
	Connectivity with Plaza Server				
4	Posting Collateral with NPCI				
	The initial collateral money the Member is willing to place with NPCI? (minimum Rs. 3 Lakh)				
5	Connectivity with NETC				
	What is the choice of connectivity for NETC?				
	Server/Switch Location				
	Connection Type				
6	NETC Payment Service Provider				

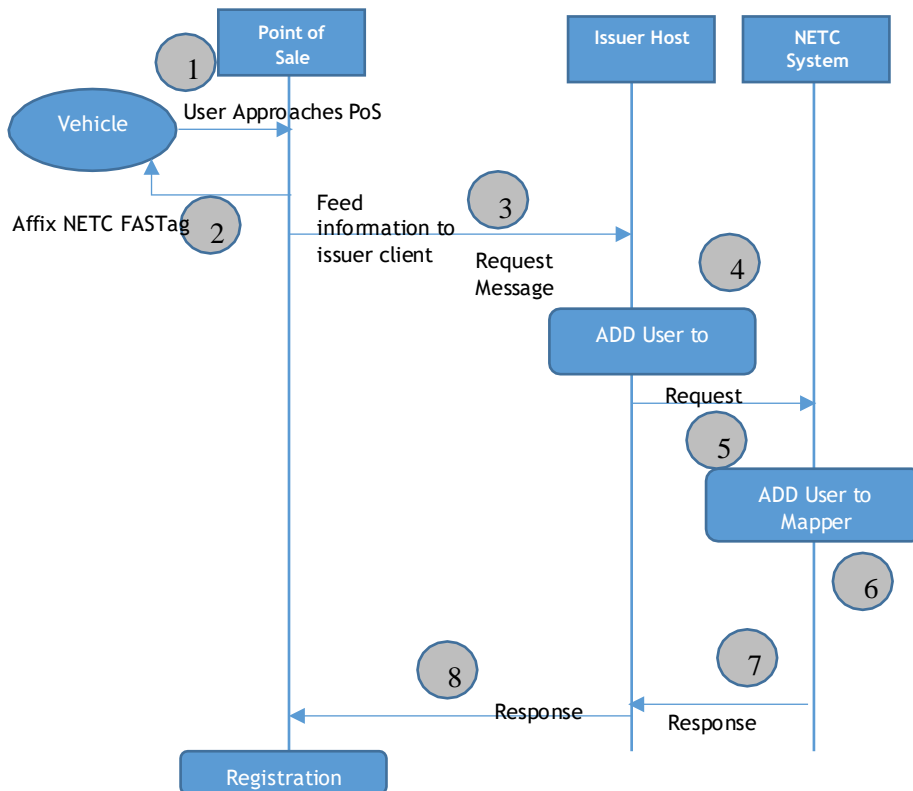
---

	Which Payment Service Provider will be used for NETC		
7	Mode of Remittance of Collateral		
	Mode of remittance of the Collateral money will be RTGS or Pay Order?		

### **Annexure – III: NETC Transaction Flows**

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#### **Section - 1: Registration Flows**



The vehicle owner approaches the Issuer POS with the required documents. Post document verification, NETC FASTag and vehicle details will be registered in Issuer Host database and subsequently to the NETC System. If required the NETC FASTag can be added in the exception list, thus completing the process.

#### Registration Transaction Flow

- 2.1.1 For the purpose of registration, a vehicle owner can approach a Point of Sale and collect the NETC FASTag by submitting the required documents to Issuer (or the point of sales).
- 2.1.2 After collecting the documents, vehicle images [optional] and security deposit, NETC FASTag issuer will verify the documents (Vehicle Registration Number, Driving License, and other IDs specified by Issuer) and affix the NETC FASTag to the windshield of the vehicle as per the specification.
- 2.1.3 NETC FASTag issuer will feed the information of the vehicle owner (Vehicle Info., Owner Info., NETC FASTag Info., Bank Info., and Exception Type) to Issuer's client application which is linked to the Issuer Host. The Point of Sale (Client Application) will initiate a request to add the vehicle owner details to the Issuer Database. The Point of Sale unit checks if the NETC FASTag needs to be added in the Exception List (depending on various factors like Vehicle is of "Exempted Vehicle Class", etc.).

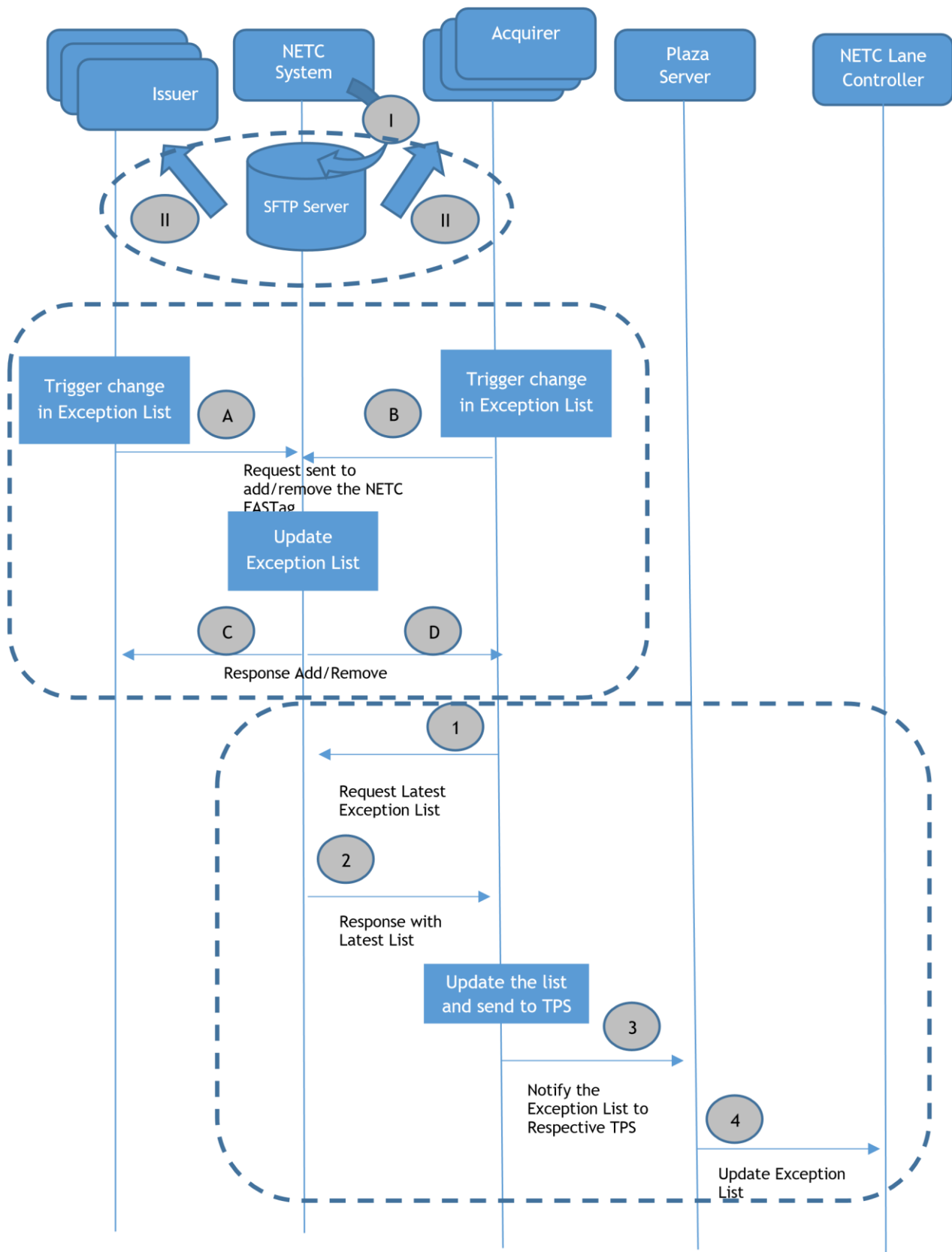
- 
- 2.1.4 The Issuer system adds all the User details provided by the NETC FASTag issuer client application in their database and map the NETC FASTag ID to one of the user account. [Savings/Current / Prepaid account etc.]
  - 2.1.5 The issuer host will send the NETC FASTag ID as request message to add the NETC FASTag and vehicle details to the NETC Mapper. The issuer needs to register the NETC FASTags in NETC Mapper as soon as it is registered in the issuer system.
  - 2.1.6 NETC Mapper after receiving NETC FASTag ID, adds all the details provided by the Issuer host in the Mapper's database and update the Exception list if required.
  - 2.1.7 NETC Mapper then sends response message to Issuer host that NETC FASTag has been added successfully or not added in the mapper database. In case NETC FASTag is not successfully registered into the mapper, the issuer should re-initiate the registration process. Issuer should ensure the NETC FASTag is issued only after successful registration of NETC FASTag into the NETC Mapper.

After receiving response message from the NETC mapper, the Issuer Host forwards the response message to the Client Application at the Point of Sale.

Thus, the registration process is complete.

*Note: - KYC needs to be performed as per the RBI guidelines at the issuer end for the mapped account*

## Section – 2: Exception List Handling



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The various types of exception lists are stored in the NETC Mapper. The exception list can be updated by Issuer/Acquirer. The above diagram describes process of addition and removal of NETC FASTag id in the exception list.

Process for addition and removal of NETC FASTag id in exception list is explained below:

I) NETC system will update the exception list files on SFTP server at pre-defined periodic intervals.

II) The Members can also download the exception lists files using the secure file transfer protocol.

A) The issuer host will initiate a request to the NETC system to add a NETC FASTag in the exception list whenever there is low balance in the account of NETC FASTag holder. Similarly, the issuer will initiate the request of removal of NETC FASTag id from the exception list whenever the NETC FASTag holder funds the NETC FASTag linked account. In the similar way the issuer host can request the addition or deletion of NETC FASTag ids in blacklist.

B) The acquirer host will initiate a request to the NETC system to add or remove the NETC FASTags added by itself in the blacklist.

C) The NETC system will add/remove the NETC FASTag id's in the requested exception list & send the response to the issuer host.

D) The NETC system will add/remove the NETC FASTag id's in the requested exception list & send the response to the acquirer host.

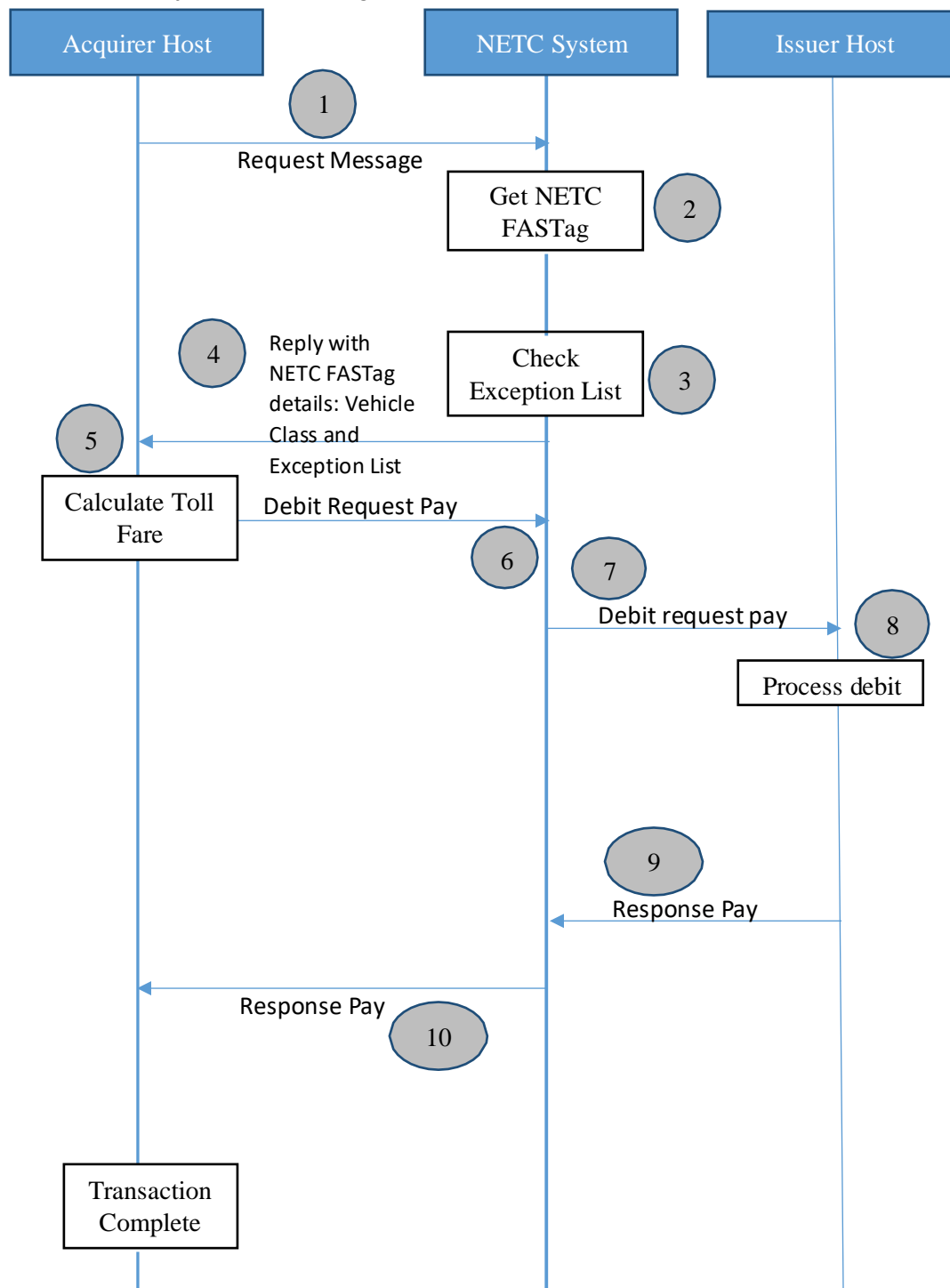
1) The acquirer host will request for the latest exception list from the NETC system at defined intervals.

2) The NETC system will respond with the latest exception list to the acquirer for creation of blacklist and discount files for Plazas.

3) The Acquirer will update the exception list on Acquirer host and send it to respective Plaza server. [This step will also be followed by the acquirer if the exception list is pulled through SFTP]

4) The Plaza server would further update the exception list in the lane controller installed at Plaza. [This step will also be followed by the acquirer if the exception list is pulled through SFTP]

### Section - 3: Query NETC FASTag Status



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In process of Query NETC FASTag status, The Acquirer Host will send the NETC FASTag ID to the NETC mapper to check if the NETC FASTag is registered by Issuer in the Mapper. Acquirer Host system will calculate the toll fare based on the vehicle class returned on this command.

Process flow of Query NETC FASTag vehicle status:

- 1) Acquirer Host posts a query request to get the NETC FASTag and bank details registered onto the Mapper.
- 2) The Mapper performs the command processing for GET\_NETC FASTAG\_DETAILS i.e. verifies if the NETC FASTag ID is present in the Mapper database.
- 3) Mapper also check if the NETC FASTag ID is present in one or more exception list.
- 4) If successful, Mapper will reply to the Acquirer host with the NETC FASTag details, bank details, Vehicle Class and related Exception Type. In case there is a mismatch of exception list at Acquirer's end, then the exception list available from the mapper will supersede.
- 5) The Acquirer Host system will then calculate the toll fare based on the vehicle class returned from the Mapper.
- 6) Acquirer Host system will send the debit request to NETC Switch to process the payment using the Request Pay command.
- 7) NETC Switch will then request the Issuer host to debit the user's account linked to NETC FASTag ID.
- 7) Issuer Host will process the debit request by deducting requested toll fare from the linked user account.
- 8) On successful debit an acknowledgement is sent back to the NETC Switch. In case the debit fails, the Issuer Host should keep the debit request in the queue for future processing i.e. NETC System will recognise the debit request received by Issuer host as successful.
- 9) The NETC switch further send the acknowledgement to the Acquirer, thus concluding the transaction.



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## **Annexure – IV: Letter of Authority**

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[On Non Judicial Stamp Paper/Franking/e-Stamping of value of Rupees Five Hundred Only)

To,

The Regional Director,

Reserve Bank of India

Mumbai

Dear Sir,

Our Current A/c No. \_\_\_\_\_ and Settlement A/c No \_\_\_\_\_ with the Reserve Bank of India (RBI) Mumbai.

1. National Payments Corporation of India (herein referred to as the NPCI), has admitted us as Member of the National Electronic Toll Collection (NETC), which is an arrangement through which switching and processing of electronic transactions over their network would be allowed.
2. Accordingly, we hereby authorize and request you that as and when a settlement instruction is received by you from the NPCI relating to our transactions in the said NETC Network, you may, without reference to us, debit/credit our above Current Account/s with such sums as may be specified by the NPCI in its settlement instructions, notwithstanding any dispute that may exist or arise between us and the NPCI.
3. The settlement instruction for debiting/crediting our Current Account/s with you would be conclusive proof of debit/credit of our Current Account/s relating to our transaction in the said NETC Network as referred to in point 2 above and it would not be necessary for us to admit and /or confirm the fact of such debit/credit by means of separate advice to you and/or NPCI.
4. We hereby further unconditionally and irrevocably undertake to arrange for the requisite funds in our Current Account with Deposit Account Department, Reserve Bank of India, Mumbai to meet the demand of NPCI. We would be bound by this undertaking and would be liable therefor under all circumstances.
5. The mandate and undertaking would not be revoked by us except with the prior concurrence of both the NPCI and the Reserve Bank of India (the RBI) and you may act upon this mandate till such time this authority is revoked in writing and all actions taken by RBI in pursuance of this mandate would be absolutely binding on us, without any risk or responsibility to the RBI.

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Thanking You,

Yours faithfully,

For and on behalf of the Applicant

## **Annexure – V: NON-DISCLOSURE AGREEMENT**

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### **NON-DISCLOSURE AGREEMENT**

This Agreement is made and entered on this ----- day of -----, 201\_ (“Effective Date”) between

NATIONAL PAYMENTS CORPORATION OF INDIA, a company incorporated in India under Section 25 of the Companies Act, 1956 (Section 8 of the Companies Act, 2013) and having its registered office at 1001A, B Wing, 10th Floor, The Capital, Plot 70, Block G, Bandra-Kurla Complex, Bandra (East), Mumbai - 400 051, Maharashtra, CIN: U74990MH2008NPL189067 (Hereinafter referred to as “NPCI”, which expression shall mean and include unless repugnant to the context, its successors and permitted assigns);

AND

\_\_\_\_\_, a company registered in \_\_\_\_\_ and having \_\_\_\_\_ its \_\_\_\_\_ registered \_\_\_\_\_ office \_\_\_\_\_ at \_\_\_\_\_ (Hereinafter referred to as “-----”, which expression would mean and include unless repugnant to the context, its successors and permitted assigns).

The term “Disclosing Party” refers to the party disclosing the confidential information to the other party of this Agreement and the term “Receiving Party” means the party to this Agreement which is receiving the confidential information from the Disclosing Party.

NPCI and ----- would hereinafter be jointly referred to as the “Parties” and individually as a “Party”.

NOW THEREFORE

In consideration of the mutual protection of information herein by the parties hereto and such additional promises and understandings as are hereinafter set forth, the parties agree as follows:

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## Article 1: Purpose

The purpose of this Agreement is to maintain in confidence the various Confidential Information, which is provided between NPCI and \_\_\_\_\_ to perform the considerations (hereinafter called "Purpose") set forth in below:

To protect the confidential information in the National Electronic Toll Collection (NETC) network service, incidental operations and any other business operation with NPCI, from disclosure to third parties.

## Article 2: DEFINITION

For purposes of this Agreement, "Confidential Information" means the terms and conditions, and with respect to either party, any and all information in written, representational, electronic, verbal or other form relating directly or indirectly to the Purpose (including, but not limited to, information identified as being proprietary and/or confidential or pertaining to, pricing, marketing plans or strategy, volumes, services rendered, users and suppliers lists, financial or technical or service matters or data, employee/agent/ consultant/officer/director related personal or sensitive data and any information which might reasonably be presumed to be proprietary or confidential in nature) excluding any such information which (i) is known to the public (through no act or omission of the Receiving Party in violation of this Agreement); (ii) is lawfully acquired by the Receiving Party from an independent source having no obligation to maintain the confidentiality of such information; (iii) was known to the Receiving Party prior to its disclosure under this Agreement; (iv) was or is independently developed by the Receiving Party without breach of this Agreement; or (v) is required to be disclosed by governmental or judicial order, in which case Receiving Party would give the Disclosing Party prompt written notice, where possible, and use reasonable efforts to ensure that such disclosure is accorded confidential treatment and also to enable the Disclosing Party to seek a protective order or other appropriate remedy at Disclosing Party's sole costs. Confidential Information disclosed orally would only be considered Confidential Information if: (i) identified as confidential, proprietary or the like at the time of disclosure, and (ii) confirmed in writing within Seven (7) days of disclosure.

## Article 3: NO LICENSES

This Agreement does not obligate either party to disclose any particular proprietary information; to purchase, sell, license, transfer, or otherwise dispose of any technology, services, or products; or to enter into any other form of business, contract or arrangement. Furthermore, nothing contained hereunder would be construed as creating, conveying, transferring, granting or conferring by one party on the other party any rights, license or authority in or to the Confidential Information disclosed under this Agreement.

## Article 4: DISCLOSURE

1. Receiving Party agrees and undertakes that it would not, without first obtaining the written consent of the Disclosing Party, disclose or make available to any person, reproduce or transmit in any manner, or use (directly or indirectly) for its own benefit or the benefit of others, any Confidential Information save and except both parties may

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disclose any Confidential Information to their Affiliates, directors, officers, employees or advisors of their own or of Affiliates on a "need to know" basis to enable them to evaluate such Confidential Information in connection with the negotiation of the possible business relationship; provided that such persons have been informed of, and agree to be bound by obligations which are at least as strict as the recipient's obligations hereunder. For the purpose of this Agreement, Affiliates would mean, with respect to any party, any other person directly or indirectly Controlling, Controlled by, or under direct or indirect common Control with, such party. "Control", "Controlled" or "Controlling" would mean, with respect to any person, any circumstance in which such person is controlled by another person by virtue of the latter person controlling the composition of the Board of Directors or owning the largest or controlling percentage of the voting securities of such person or by way of contractual relationship or otherwise.

2. The Receiving Party would use the same degree of care and protection to protect the Confidential Information received by it from the Disclosing Party as it uses to protect its own Confidential Information of a like nature, and in no event such degree of care and protection would be of less than a reasonable degree of care.
3. The Disclosing Party would not be in any way responsible for any decisions or commitments made by Receiving Party in relying on the Disclosing Party's Confidential Information.

#### Article 5: RETURN OR DESTRUCTION OF CONFIDENTIAL INFORMATION

The parties agree that upon termination/expiry of this Agreement or at any time during its currency, at the request of the Disclosing Party, the Receiving Party would promptly deliver to the Disclosing Party the Confidential Information and copies thereof in its possession or under its direct or indirect control, and would destroy all memoranda, notes and other writings prepared by the Receiving Party or its Affiliates or directors, officers, employees or advisors based on the Confidential Information and promptly certify such destruction.

#### Article 6: INDEPENDENT DEVELOPMENT AND RESIDUALS

Both parties acknowledge that the Confidential Information coming to the knowledge of the other may relate to and/or have implications regarding the future strategies, plans, business activities, methods, processes and or information of the parties, which afford them certain competitive and strategic advantage. Accordingly, nothing in this Agreement will prohibit the Receiving Party from developing or having developed for it products, concepts, systems or techniques that are similar to or compete with the products, concepts, systems or techniques contemplated by or embodied in the Confidential Information provided that the Receiving Party does not violate any of its obligations under this Agreement in connection with such development.

#### Article 7: INJUNCTIVE RELIEF

The parties hereto acknowledge and agree that in the event of a breach or threatened breach by the other of the provisions of this Agreement, the party not in breach will have no adequate

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remedy in money or damages and accordingly the party not in breach would be entitled to injunctive relief against such breach or threatened breach by the party in breach.

#### Article 8: NON-WAIVER

No failure or delay by either party in exercising or enforcing any right, remedy or power hereunder would operate as a waiver thereof, nor would any single or partial exercise or enforcement of any right, remedy or power preclude any further exercise or enforcement thereof or the exercise of enforcement of any other right, remedy or power.

#### Article 9: JURISDICTION

If any dispute arises between the parties hereto during the subsistence or thereafter, in connection with or arising out of this Agreement, the dispute would be referred to arbitration under the Indian Arbitration and Conciliation Act, 1996 by a sole arbitrator mutually agreed upon. In the absence of consensus about the single arbitrator, the dispute may be referred to joint arbitrators, one to be nominated by each party and the said arbitrators would nominate a presiding arbitrator, before commencing the arbitration proceedings. Arbitration would be held in Mumbai, India. The proceedings of arbitration would be in the English language. The arbitrator's award would be final and binding on the parties.

#### Article 10: GOVERNING LAW

This Agreement would be governed exclusively by the laws of India and jurisdiction would be vested exclusively in the courts at Mumbai in India.

#### Article 11: NON-ASSIGNMENT

This Agreement would not be amended, modified, assigned or transferred by either party without the prior written consent of the other party.

#### Article 12: TERM

This Agreement would remain valid from the date last written below until the termination or expiry of this Agreement. The obligations of each Party hereunder will continue and be binding irrespective of whether the termination / expiry of the Agreement for a period of five years after the termination / expiry of this Agreement.

#### Article 13: INTELLECTUAL PROPERTY RIGHTS

Neither Party will use or permit the use of the other Party's names, logos, trademarks or other identifying data, or otherwise discuss or make reference to such other Party or infringe Patent, Copyrights, in any notices to third Parties, any promotional or marketing material or in any press release or other public announcement or advertisement, however characterized, without such other Party's prior written consent.

#### Article 14: GENERAL

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1. Nothing in this Agreement is intended to confer any rights/remedies under or by reason of this Agreement on any third party.
  2. This Agreement and the confidentiality obligations of the Parties under this Agreement supersedes all prior discussions and writings with respect to the Confidential Information and constitutes the entire Agreement between the parties with respect to the subject matter hereof. If any term or provision of this Agreement is determined to be illegal, unenforceable, or invalid in whole or in part for any reason, such illegal, unenforceable, or invalid provisions or part(s) thereof would be stricken from this Agreement.
  3. Any breach of any provision of this Agreement by a party hereto would not affect the other party's non-disclosure and non-use obligations under this Agreement.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement by their duly authorized representatives as of the Effective Date written above.

NATIONAL PAYMENTS CORPORATION OF  
INDIA

TYPE COMPANY NAME

By:

By:

Name:

Name:

Designation:

Designation:

#### **Annexure – VI: KYC/AML undertaking by Members**

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(Member's Letter Head)

#### KYC/AML Undertaking by Members

We \_\_\_\_\_ (Name of the Member) with registered office at \_\_\_\_\_ have agreed to participate in the implementation of the products & services provided by National Payments Corporation of India (NPCI), with registered office at 1001 A, B wing 10<sup>th</sup> Floor, The Capital, Bandra-Kurla Complex, Bandra (East), Mumbai - 400051 and for that purpose, we hereby declare and undertake to NPCI that:

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- ✓ We hereby confirm to have an established process for Know Your User (KYC), Anti Money Laundering process (AML) & Combating of Financing of Terrorism (CFT) and that we shall comply with all the Reserve Bank of India (RBI) norms on KYC, AML& CFT.
  - ✓ We hereby confirm that none of our | the company's Director(s) is/are a "Politically Exposed Person (PEP)" or "close relative(s) of a PEP" or appear in the "list of terrorist individuals / entities" provided by RBI. In the event of our existing Director(s) is/are "PEP" or "close relative(s) of a PEP" or appear in the list of "terrorist individuals / entities" provided by RBI, the details of same shall be furnished to NPCI on letter head.
  - ✓ We hereby confirm to have an appropriate procedure for PEP check and name screening of employees and users against the list of terrorist individuals / entities provided by RBI. In the event of an existing employee(s), user(s) or the beneficial owner(s) of an existing account, using NPCI products & services, is a "PEP" or "close relative(s) of a PEP" or appear in the list of "terrorist individuals / entities" provided by RBI, we confirm to provide the details of such employee(s)/user(s) or beneficial owner(s) to NPCI.
  - ✓ Keeping in view the new regulatory guidelines of Reserve Bank of India, we hereby confirm to have appropriate ongoing risk management procedures for User Due Diligence (CDD) and Enhanced Due Diligence (EDD) in case if any user(s) or the beneficial owner(s) of an existing account is/are a "PEP" or "close relative(s) of a PEP" or appear in the list of "terrorist individuals / entities" provided by RBI.
  - ✓ We hereby confirm to offer NPCI products & services only to the users who are KYC compliant.
  - ✓ We hereby confirm to do the necessary investigation and provide NPCI with the required details on alerts sent to the bank by NPCI's Risk Management Team.

Date: Authorized Signatory(ies)

(Name & Designation)

Place:

Stamp)

(With

## Annexure- VII: Guidelines for Dispute Management System in NETC System

### Disputes in NETC System

S No.	Action	Reasons	Dispute Category
01	Debit Adjustment	<ul style="list-style-type: none"> <li>Toll Fare calculation error</li> <li>Vehicle class mismatch</li> <li>Not an Exempted Vehicle</li> </ul>	Short funds with Acquirer
02	Credit Adjustment	<ul style="list-style-type: none"> <li>User account is debited multiple times</li> <li>Toll Fare calculation error</li> </ul>	Excess credit with Acquirer
03	Chargeback	<ul style="list-style-type: none"> <li>Services not availed</li> <li>Duplicate processing single issuer</li> <li>Duplicate processing multiple issuer</li> <li>Toll Fare calculation error</li> <li>Vehicle class mismatch</li> <li>Illegible/Invalid evidence</li> <li>Exempted Vehicles</li> </ul>	User Dispute
	Chargeback	<ul style="list-style-type: none"> <li>Fraudulent multiple transactions</li> </ul>	Fraud
	Chargeback	<ul style="list-style-type: none"> <li>Not NETC FASTag</li> </ul>	NETC FASTag Validation Errors
	Chargeback	<ul style="list-style-type: none"> <li>Transactions processed or Debit Adjustment raised</li> </ul>	Insufficient Funds
04	Re-presentment	<ul style="list-style-type: none"> <li>Supporting Documents for Services availed</li> <li>Supporting Documents for multiple passing</li> <li>Proof of non-acceptance of chargeback</li> <li>Proof of NETC FASTag ID not present in Exception List</li> </ul>	User Dispute



		<ul style="list-style-type: none"> <li>• Proof of Toll Fare calculation</li> <li>• Proof of Vehicle class</li> <li>• Valid &amp; Legible Documents</li> <li>• Proof of not an Exempted Vehicles</li> </ul>	
		<ul style="list-style-type: none"> <li>• Proof of valid transactions</li> </ul>	Fraud
		<ul style="list-style-type: none"> <li>• Proof of successful validation</li> </ul>	NETC FASTag Validation Errors
05	Pre Compliance/ Compliance	<ul style="list-style-type: none"> <li>• NETC FASTag is not NETC FASTag</li> <li>• NETC FASTag is not as per the EPC guidelines</li> <li>• NETC FASTag vendor not certified by NPCI</li> <li>• Others specify</li> </ul>	NETC scheme rule violation

#### Annexure- VIII: SLA for Members & NPCI

### SERVICE LEVEL AGREEMENT FOR MEMBERS & NPCI PARTICIPATING IN THE NETC PROGRAMME

#### General Terms

- i. IHMCL shall issue notice to Members/NPCI on report of deviance in performance parameters as per Service Level Agreement (SLA) document leading to penalty (T - Date of Intimation).
- ii. Members/NPCI to provide responses in their clarification/supporting evidences in the T+ 15 calendar days. In the event of no response from the defaulting entity, the claim will be deemed accepted and the penalty shall be imposed as per SLA.
- iii. IHMCL shall review the responses/clarifications from Members/NPCI and take decisions as approved by IHMCL Competent Authority and intimate Members/NPCI.
- iv. The Service Level Agreement (SLA) parameters shall be monitored and default charges will be computed on monthly basis.
  - o In case, IHMCL/NHAI so desires, the SLAs may be reviewed on yearly basis and may be amended in consultation with NPCI, top three (03) issuer and Acquirers and NHBF/concessionaires. Till such time, any revision is mutually agreed, the existing SLAs will continue to be in force.

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- v. SLA will be excluded in case of incidents/instances as specified by IHMCL/NHAI to the Members, depending upon case to case basis.
  - vi. IHMCL/NHAI shall take into considerations the escalations/evidences from various project stakeholders such as Concessionaire, Toll Operators, Users, NPCI, Issuer/Acquirers, etc. to assess the SLA deviations
  - vii. Any breach of SLA due to non-availability of internet services or Force Majeure events, scheduled downtime, vandalism damage shall not be accountable to Members.
  - viii. Any scheduled and approved preventive maintenance activity by the Members which affects the NETC system shall be carried out with prior intimation to IHMCL/NHAI and NPCI. Any periodic bank/server level maintenance activities being done by Members shall be intimated to IHMCL and affected party(ies) such as concessionaire/ Plazas operators etc. at least 7 working days in advance.
  - ix. All technical terms shall be in line with the definition provided in the Interface Control Document (ICD) version 2.4 or as amended from time to time, as applicable.
  - x. Week shall mean 7 days, starting Sunday to Saturday.
  - xi. Calendar day mean any day in a calendar month.
  - xii. Working day shall mean any working day as declared by the RBI.
  - xiii. Rate of Interest incurred on any penalty amount shall be as per prevailing NHAI rates.
  - xiv. Default charges/penalty amount for a month shall be capped at ten percent (10%) of the total Service fee (revenue earned by the participant) for the given month or Rs. 5,00,000 (Rupees Five Lakhs) whichever is higher. In addition to the default charges/penalty amount, the default banks shall also bear any losses incurred by affected parties such as Concessionaire/Toll operating agencies, System Integrator, etc. due to non-adherence of the SLA parameters by the default banks.
  - xv. The penalty amount as defined in this document shall be applicable from the date of issuance of this document.
  - xvi. In case of repetitive defaults from a Member, IHMCL reserves the right to take appropriate steps as deemed fit, to the extent of debarring the defaulting banks from the NETC Programme.

### **Process of Penalty Deduction**

The process of deduction of penalties/fine shall be as below:

- i. As per the NACH/Auto debit process specified in Annexure A.
- ii. Losses incurred by Concessionaire/toll operating agency arising due to breach of SLA shall be payable to Concessionaire/toll operating agency to their respective Bank account within 10 days from the date of final intimation from IHMCL. In case any default Member fails to pay the penalty amount to Concessionaire/ Toll Operating Agency, the same shall be recovered by NACH process as mentioned in point 2 (i) as above.

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## SLA for Acquirers

The Service Level Parameter for the Acquirers shall be as under:

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
1.	Sharing of Blacklist_ Diff file with Plaza	The Acquirer/entity shall share Blacklist_Diff file to the SFTP folder of the Plaza.	SFTP folder of Plaza to be updated every 10 minutes (10 minutes will be calculated from the time of Blacklist_Diff file uploaded at SFTP).	Any financial losses incurred by the Concessionaires/Toll Operator due to non-compliance of the SLA would be borne by the Acquirer/entity.	<ul style="list-style-type: none"><li>All chargeback for low balance and blacklist shall be borne by the Acquirer/entity, except for cases that are due to issues of NPCI switch. In the latter cases, the penalties shall be borne by NPCI.</li><li>Concessionaire /Toll Operators shall not be held responsible for any losses incurred due to non-adherence of the SLA by Acquirer/entity.</li></ul> <p>If there is any frequent change in Diff file within the 10 minutes' interval, then the Acquirer is required to ensure that the last transmitted Diff file has all the updated details.</p>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
					If any transaction gets rejected due to the liability of Acquirer then it is the responsibility of Acquirer to settle all that rejected transactions within 3 working days.
2.	Sharing of INIT file with Plaza	The Acquirer/entity shall share the INIT file to the SFTP folder of the Plaza.	SFTP folder of Plaza to be updated on a daily basis.	Any financial losses incurred by the Concessionaires/Toll Operator due to non-compliance of the SLA would be borne by the Acquirer/entity.	<ul style="list-style-type: none"> <li>All chargeback for low balance and blacklist shall be borne by the Acquirer/entity.</li> <li>Concessionaire /Toll Operators shall not be held responsible for any losses incurred due to non-adherence of the SLA by Acquirer/entity.</li> <li>Content of INIT file will be same for all acquiring banks (excluding monthly and local pass).</li> <li>It is the responsibility of Acquirer to pull INIT file before 23:59:59 hrs. and send it to SFTP folder.</li> </ul>
3.	Processing of a toll transaction, including of sending the transaction to NPCI system by	The Acquirer/entity should process a toll transaction which is uploaded on SFTP folder by	The entire process of picking up a toll transaction and sending it to NPCI system shall be done within 5 minutes from the time of	<ul style="list-style-type: none"> <li>Any financial losses incurred by the Concessionaires/Toll Operator due to non-compliance of the SLA would be borne</li> </ul>	<ul style="list-style-type: none"> <li>For the measurement of the SLA, it is pre-requisite that both concessionaire as well as the Acquirer/entity shall maintain server log for the period of three months of their respective</li> </ul>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
	the Acquiring Bank/entity	the concessionaire/toll operator and send the transaction to the NPCI system.	receipt of toll transaction on SFTP folder.	<p>by the Acquirer/entity.</p> <ul style="list-style-type: none"> <li>Breach of SLA reported shall be subject to penalty as under: <ul style="list-style-type: none"> <li>Less than 5 incidents of breach for a particular Plaza in a calendar month with valid reasons acceptable to IHMCL/NHAI – <b>No penalty</b></li> <li>5 or more number of incidents for a particular Plaza in a calendar month – <b>Rs. 50,000/-</b></li> </ul> </li> </ul>	<p>systems to trace the transaction upload time on SFTP folder as well as SFTP connectivity status.</p> <ul style="list-style-type: none"> <li>It is only applicable if the concessionaire SLA of 10 minutes' transaction upload is followed.</li> </ul>
4.	Sharing of TRC (Transaction Reconciliation) and VRC	Acquiring Bank/entity shall share TRC and VRC files with the	TRC and VRC files to be updated by Acquirer/entity on a daily basis as prescribed in ICD	<ul style="list-style-type: none"> <li>Any losses incurred by concessionaire or toll operator due to non-adherence of</li> </ul>	<ul style="list-style-type: none"> <li>For the measurement of the SLA, it is pre-requisite that both concessionaire as well as the Acquirer/entity shall maintain</li> </ul>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
	(Violation Reconciliation) file to the SFTP folder of Plaza	<p>concessionaire / toll operator on a daily basis.</p> <p>Status of accepted, rejected transactions (with valid reason code) shall be shared in TRC and VRC file by Acquirer/entity.</p>	2.4. document as amended from time to time.	<p>the SLA shall be borne by the Acquirer/entity.</p> <ul style="list-style-type: none"> <li>Breach of SLA reported shall be subject to penalty as under: <ul style="list-style-type: none"> <li>Up to 2 incidents of breach for a particular Plaza in a calendar month with valid reasons acceptable to IHMCL/NHAI – <b>No penalty</b></li> <li>More than 2 incidents for a particular Plaza in a calendar month – <b>Rs. 50,000/-</b></li> </ul> </li> </ul>	<p>server log of their respective systems to trace the TRC and VRC file upload time as well as SFTP connectivity status.</p> <p>The TRC and VRC files shall contain all transactions uploaded by concessionaire/toll operator for the day under consideration.</p> <p>All TRC and VRC files should be reached to Concessionaire/Toll operator before 6:00 AM.</p>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
5.	Sharing of Chargeback details with concessionaire/toll operator post receipt in NRCS	Acquirer/entity shall share the chargeback transaction details with relevant supporting to be validated by concessionaire or toll operator.	<p>Chargeback details with relevant supporting to be shared within T+1 working day</p> <p>Where T = Chargeback transaction received in NRCS</p>	<ul style="list-style-type: none"> <li>All the chargeback amount incurred due to breach of SLA for a particular incident shall be borne by the Acquirer/entity.</li> </ul>	<ul style="list-style-type: none"> <li>Acquirer/entity shall mandatorily take the approval of concessionaire/toll operator before debiting the chargeback amount to the account of concessionaire/toll operator.</li> <li>The concessionaire/toll operator shall mandatorily respond (i.e. accept or reject) the chargeback request within 5 calendar days<sup>1</sup> of receipt of the same. If no respond is received from the concessionaire/toll operator within 5 calendar days<sup>1</sup>, the Acquirer/entity may debit the chargeback amount to the account of concessionaire/toll operator.</li> <li>Acquirer will share the chargeback details of accepted and rejected chargeback request with concessionaire/Toll operator.</li> </ul>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
					<sup>1</sup> Note - Post necessary changes in the NETC system by NPCI, 5 calendar days shall be changed to 7 calendar days.
6.	Settlement of clean transactions	Acquirer/entity shall share the reconciliation file with concessionaire /toll operator on daily basis. The Acquirer/entity shall settle the final amount for a particular day to the bank account of the Concessionaire / toll operator. The chargeback transaction details with relevant supporting to be validated by	Acquirer/entity shall settle the amount for all clean transactions to concessionaire/ toll operator within T+1 working day.  Where T =Transaction processing day	<ul style="list-style-type: none"> <li>The Acquirer/entity shall be liable to pay any interest accrued on the outstanding amount to the concessionaire /toll operator.</li> <li>Rate of Interest shall be equivalent to the late fee interest charged by NHA on outstanding amount for concessionaire/toll operators.</li> <li>Breach of SLA reported for any incidents of breach for a particular Plaza</li> </ul>	All amount for clean transaction for the day till 23:50 Hrs. shall be settled with in T+1 working day.



Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
		concessionaire or toll operator		in a calendar month- <b>Rs. 50,000/- penalty will be imposed per incident.</b>	
7.	Settlement of violation transactions  (Only the differential amount)	Acquirer / entity shall perform complete audit of transaction marked as “is violation=1” and raise debit adjustment of valid violation transactions.	<ul style="list-style-type: none"> <li>T+1 working day (settlement of violation transaction to be done in T+ working day)</li> </ul> <p>Where T = Debit Adjustment settled in Acquirer account by NPCI</p> <ul style="list-style-type: none"> <li>The complete cycle of violation processing shall be completed within T + 5 calendar days</li> </ul> <p>Where T = Transaction processing day by Acquirer.</p>	<ul style="list-style-type: none"> <li>If the transaction is rejected due to delay in audit, the transaction amount shall be borne by the Acquirer/entity.</li> <li>During audit, any incorrect image review by Acquirer/entity, the transaction amount shall be borne by the Acquirer/entity.</li> </ul>	<ul style="list-style-type: none"> <li>As the initial amount is settled through mapper class of NPCI, only the differential amount shall be settled to the Concessionaire or toll operators within 6 days of transaction upload date.</li> </ul>
8.	Account mapping for settlement of funds	In event of new Toll operator replacing existing toll operator, NHAI/IHMCL sends intimation to Acquirer/entity to change the account details for	<ul style="list-style-type: none"> <li>As per date and time mentioned on letter/email by NHAI/IHMCL</li> <li>IHMCL/NHAI/Concessionaire shall give 2 days’ advance intimation to Members for change of mapping of settlement account.</li> </ul>	<ul style="list-style-type: none"> <li>The amount wrongly transferred shall be refunded to the correct recipient immediately, not exceeding two working days from the date of receipt</li> </ul>	<ul style="list-style-type: none"> <li>NHAI/IHMCL shall intimate Acquiring Bank as per Plaza Roll Over policy via email which shall be binding on the bank.</li> <li>No penalty shall be imposed on Banks for cases not attributable to the Banks.</li> </ul>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
		transfer of funds collected through NETC program.  Acquirer/entity shall change the account details as per instruction by NHA/IHMCL.		complaint by the Acquirer/entity.  • In case of any delay beyond 2 working days, the Acquirer/entity shall be liable to pay interest on the amount under consideration.	
9.	Setting up of NETC FASTag Point-of- Sale (PoS) at Plaza acquired	Acquirer shall setup dedicated Point of Sale (PoS) for issuance of NETC FASTag from the date of start of providing acquiring services at the Plaza.	<ul style="list-style-type: none"> <li>One (1) dedicated POS shall be setup for issuance of NETC FASTag</li> <li>POS shall be operational between 9 am to 6 pm on all working days.</li> </ul>	Penalty shall be calculated as below: <ul style="list-style-type: none"> <li>Rs. 1000 per day for delay in setup of Point-of-sale (PoS) from the date of start of providing acquiring services at the Plaza.</li> <li>If Acquirer fails to set up PoS within 30 days, IHMCL reserves the right to initiate process of</li> </ul>	

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
				plaza allocation to other Acquirer, as deemed fit.	
10.	Priority of BLT/DIS file.	Any NETC FASTag in Monthly pass, Local Monthly pass and Global Exemption Acquirer needs to send the NETC FASTag information in DIS file and the same shall not be available in blacklist file for the particular Plaza.	Acquirer to manage the BLT file generation as per ICD 2.4 document as amended time to time and ensure NETC FASTag present in discount file not to be sent in blacklist file.	<ul style="list-style-type: none"> <li>Any losses incurred by concessionaire or toll operator due to non-adherence of the SLA shall be borne by the Acquirer/entity.</li> <li>Breach of SLA reported shall be subject to penalty as under: <ul style="list-style-type: none"> <li>Up to 5 incidents of breach for a particular Plaza in a calendar month with valid reasons acceptable to IHMCL/NHAI Rs. 5000/-</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>If the NETC FASTag has been blacklisted for any reason, Acquirer shall send the NETC FASTag into Blacklist file and remove the same from Discount file as per timelines defined in ICD 2.4 as amended from time to time.</li> </ul>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
				More than 5 incidents for a particular Plaza in a calendar month - Rs. 10,000/-	

### SLA for Issuers

The Service Level Parameter for the Issuers shall be as under:

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
1.	NETC FASTag Issuance as per programme Guidelines	Issuers shall ensure that right class of NETC FASTag is issued to right class of Vehicle without any discrepancy in mapper class. Same NETC FASTag shall also be affixed on the assigned vehicle at the time of issuance..	-	Penalty shall be imposed as below – <ul style="list-style-type: none"> <li>Up to 100 cases of wrong issuance reported in a calendar month – <b>Rs 500 per NETC FASTag.</b></li> <li>More than 100 cases of wrong issuance reported in a calendar month – <b>Rs 1000 per NETC FASTag.</b></li> </ul>	<ul style="list-style-type: none"> <li>Concessionaire /Toll Operators shall not be held responsible for any losses incurred due to non-adherence of the SLA by Issuer/entity. However, the Concessionaires/Toll operators are required to ensure that the issue is raised with proper reason code and requisite AVC images or relevant verifiable supporting evidences such as VAHAN and RC copy are submitted with the same.</li> </ul>

Sl. No.	Service Description	SLA definition	Service Requirement Level	Default Charges	Remarks, if any
				In addition to above, default Issuer shall also be liable to pay for all the losses incurred by the concessionaire/ Plaza operators.	
2.	Modification in the mapper class of NPCI	The Issuer should modify the mapper class as per actual class as validated by Plaza infrastructure.	T+3 days  Where T = date of intimation of actual class after validation of the same by Concessionaire/Toll operator,	Penalty shall be imposed as below – <ul style="list-style-type: none"> <li>Up to 100 cases of default reported in a calendar month - Rs 500 per NETC FASTag.</li> <li>More than 100 cases of default reported in a calendar month - Rs 1000 per NETC FASTag.</li> </ul> In addition to above, default Issuer shall also be liable to pay for all the losses incurred by the concessionaire/ Plaza operators.	
3.	Vehicle Registration	Issuers are required to update the Vehicle	Issuers shall VRN in the CCH of NETC	<ul style="list-style-type: none"> <li>Any incident for default shall be dealt as below:</li> </ul>	

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
	Number update in the CCH	Registration Number (VRN) in the CCH of NETC program	program within 3 months of NETC FASTag from the date of sale via Point of Sales (POS) set-up in OEM/Dealers network	<ul style="list-style-type: none"> <li>Penalty for Delay in updating the VRN in CCH after 90 days from the date of sale of vehicle – Rs. 2000 per NETC FASTag</li> <li>Beyond 90 days, Rs.50 per day for delay</li> </ul>	

#### SLA for NPCI

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
1	Service Availability - NETC Service	<p>NPCI to provide NETC transaction switching service with assured service availability of 99.95%.</p> <p>Availability shall be measured on the monthly basis or as mentioned in the Contract Agreement.</p>	<ul style="list-style-type: none"> <li>Service Availability between 99.5% - 99%</li> <li>Service Availability between 99 % - 98%</li> <li>Service Availability between 99 % - 98%</li> </ul>	<ul style="list-style-type: none"> <li>Service Availability between 99.5% to 99% - Rs. 10,00,000/- (per month)</li> <li>Service Availability between 99 % to 98% - Rs. 15,00,000/- (per month)</li> <li>Service Availability below 98% - Rs. 25,00,000/- (per month)</li> </ul>	NPCI to provide system generated reports or report certified by IT Head NPCI or concerned divisional head of NPCI, on service availability on a monthly basis, by 7 <sup>th</sup> day of every month (of the previous month)

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
2	Service Availability - NETC Settlement Service	<p>NPCI to provide switch settlement cut-over time at 10:00 hrs, 14:00 hrs, 17:30 hrs and 23:00 hrs and settlement and fund transfer will be performed by 9.00 hrs, 11:30 hrs, 15:30 hrs and 18:30 hrs.</p> <p>As per settlement cycle mentioned in the NETC Procedural Guidelines and as amended from time to time.</p>	<p>Service Availability shall be 99.5%.</p> <p>Default instance shall be measured in terms of delay in execution of switch settlement cut-over time and number of switch settlement cycles for a working day.</p>	<ul style="list-style-type: none"> <li>Number of default instances less than 5 times in a calendar month - <b>No penalty</b></li> <li>Number of default instances equal to or more than 5 times but less than 10 times in a calendar month - <b>Rs. 50,000/-</b></li> <li>Number of default instances equal to or more than 10 times in a calendar month - <b>Rs. 1,00,000/-</b></li> </ul>	<p>NPCI to provide system generated reports or report certified by IT Head NPCI or concerned divisional head of NPCI, on service availability on a monthly basis, by 7th day of every month (of the previous month)</p>

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
3	Dispute Management Services (DMS)	NPCI to provide service as per agreement and provide dispute management platform to handle dispute between issuer and acquirer Members.	Service Availability (uptime of the DMS Portal) shall be 99.5%.	<ul style="list-style-type: none"> <li>Service Availability between 99.5% to 99% - Rs. 10,000/-</li> <li>Service Availability between 99 % to 98% - Rs. 15,000/-</li> <li>Service Availability below 98% - Rs. 20,000/-</li> </ul>	NPCI to provide system generated reports or report certified by IT Head NPCI or concerned divisional head of NPCI, on service availability on a monthly basis, by 7 <sup>th</sup> day of every month (of the previous month)
4	Ancillary services	NPCI to provide network connectivity service as per Agreement.	<p>Service Availability shall be 99.5%.</p> <p>Subject to the availability of primary and secondary connectivity.</p>	<ul style="list-style-type: none"> <li>Service Availability between 99.5% to 99% - Rs. 10,000/-</li> <li>Service Availability between 99 % to 98% - Rs. 15,000/-</li> <li>Service Availability below 98% - Rs. 20,000/-</li> </ul>	NPCI to provide system generated reports or report certified by IT Head NPCI or concerned divisional head of NPCI, on service availability on a monthly basis, by 7 <sup>th</sup> day of every month (of the previous month)



## Other Penalty Parameters – Members

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
1	Implementation of ICD 2.4 Improvement by Acquirers	Acquirer to make necessary changes in the system to incorporate the ICD 2.4 improvement document.	Acquirer to implement the system as per timelines. Penalty shall be measured based on the number of Plazas yet to be upgraded to ICD 2.4 improvement document on a daily basis.	<ul style="list-style-type: none"> <li>Penalty for delay in implementation of ICD 2.4 improvement document: Rs. 500/- per day per Plaza not upgraded with ICD 2.4 improvement document.</li> </ul>	-
2	Landing Page for IHMCL My NETC FASTag mobile	Identified bank to share URL for landing page with IHMCL for integration with My NETC FASTag App	Issuer to implement the system as per timelines Last revised deadline being 31 <sup>st</sup> March 2019.	<ul style="list-style-type: none"> <li>Penalty for delay in implementation of Landing Page: Rs. 1000/- per day.</li> </ul>	-
3	UPI Recharge facility of NETC FASTag	Recharge facility of NETC FASTag through UPI needs to be enabled by Member.	Revised Deadline - 31 Dec 2018	<ul style="list-style-type: none"> <li>Penalty for delay in implementation of UPI recharge facility: Rs. 1000/- per day</li> </ul>	The penalty shall not be applicable to banks which are directly linking with CASA and those banks (co-operative banks) which are not Live on UPI.

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
4	Marketing & Promotional activities	Members to allocate at least 2% of the revenue generated from NETC FASTag programme in a calendar quarter.	Members to carry out advertisement, social media marketing ads etc. Penalty shall be measured based on revenue for each Members.	<ul style="list-style-type: none"> <li>Marketing expenditure less than 2% but greater than 1% in a calendar quarter: Rs. 1,00,000/-</li> <li>Marketing expenditure less than 1% in a calendar quarter - Rs. 2,00,000/-</li> </ul>	Members to submit a report on marketing expenditure on NETC FASTag/NETC programme by 10 <sup>th</sup> calendar day of succeeding quarter.
5	Dispute/Complaint/Issue resolution based on report of NPCI and IHMCL. Reports may be based on NPCI DMS Portal/NRCS system or IHMCL user compliant portal or NHA Helpline No. 1033	Members to close Dispute/Complaint/Issue raised within Turn Around Time (TAT) defined. TAT shall be defined as under: Acknowledgement of Compliant/Dispute by bank - Within 2 days.	Penalty to be measured based on the delay from defined TAT on each Dispute/Complaint/Issue	<ul style="list-style-type: none"> <li>Delay per day in resolution of Dispute/Complaint/Issue: Rs. 100/- per Dispute/Complaint/Issue</li> </ul>	

Sl. No.	Service Description	SLA definition	Service Level Requirement	Default Charges	Remarks, if any
6	Plaza Roll Over Policy – Processing of transactions before switch over by existing Acquirer.	Existing Acquirer to ensure processing of all transactions before switch over. Where Switch over means transferring of Plaza from existing Acquirer to new Acquirer.	Penalty to be measured based on the amount pending for settlement after chargeback/other settlement.	<ul style="list-style-type: none"> <li>Settlement amount to be paid by existing Acquirer to concessionaire.</li> </ul>	For plaza roll over, IHMCL will examine on case to case basis, if it is found that existing Acquirer is unable to settle the transaction before last date of acquisition at Plaza for which toll operator/concessionaire has no fault than penalty shall be applicable on existing Acquirer
7	Plaza Roll Over Policy – Establishment of connection between NPCI and Acquirer	The connection to the NPCI system and the Plaza server must be established by the new Acquirer failing which penalty may be imposed as per the SLA.	If new acquiring bank fails to establish connection between NPCI system and Plaza server, penalty equivalent to loss of ETC transactions (on average) per hour will be levied.	<ul style="list-style-type: none"> <li>For each one hour, Rs. 10,000/- will be levied</li> </ul>	Considering penalty time to start after one hour of downtime already available as downtime i.e. for duration beyond one-hour downtime, penalty will be imposed.

## **Annexure A – Penalty Collection procedure**

### **1. Background**

In the NETC Steering Committee Meeting held at NHAI Head Office on 24<sup>th</sup> December 2018, it was decided to levy penalties on Members on account of non-compliance of Service Level Agreement (SLA). Subsequently IHMCL had circulated the SLA document with Members. IHMCL had released the first penalty list to Members on account of non-compliance of enablement of UPI recharge functionality and Integration with IHMCL My NETC FASTag application for IHMCL NETC FASTag account linking.

As the recovery of penalty charges from Member's RBI settlement account could not be initiated due to internal audit, compliances and reconciliation issues, it was proposed to work out a separate recovery process. In the last meeting held at NHAI office dated 31<sup>st</sup> May 2019, Members had requested IHMCL to raise separate invoices to collect the penalties instead of debiting the RBI settlement account.

### **2. Objective**

The objective of this section is to define the end-to-end process for collection of penalty charges levied on Members & NPCI on account non-compliance of SLA parameters as set out in this document.

### **3. Penalty Process**

IHMCL shall recover the penalties directly from Members through NACH mandate solution, where in all the NETC Members shall sign the NACH mandate with IHMCL and the penalties shall be collected from Members through the NACH mandate process.

#### **A. The detail process NACH Solution is given below:**

IHMCL shall select sponsor bank to collect the penalty from Member through NPCI NACH System.

- i. IHMCL will select a NACH Sponsor bank (who is NPCI NACH Member) to process the NACH mandate for penalty collection.
- ii. IHMCL's Sponsor Bank shall share the NACH mandate with IHMCL to get it signed by Members.
- iii. All NETC Members & NPCI shall sign NACH mandate and share with IHMCL.
- iv. IHMCL will share the same with Sponsor bank for generation of Unique Mandate Reference Number (UMRN).

- v. Whenever IHMCL raises any penalty invoice, they shall inform the Sponsor bank to process the mandate to collect the invoice amount from Members & credit the same to IHMCL account. Mandate processing shall be carried out by the Sponsor Bank on the 15<sup>th</sup> of the calendar month (if 15<sup>th</sup> is holiday, next working day shall be considered).

**Note:-**

- All the NETC Members has to sign the NACH mandate and share it with IHMCL.
- In case any new bank is on-boarded on NETC program, NACH mandate shall be part of the on-boarding document and NPCI shall share it with IHMCL for further processing.
- In case of any mandate transaction getting failed, IHMCL shall ask the sponsor bank to represent it by taking confirmation from Member.
- As an additional mode of payment, Members can also make the payment through NEFT or RTGS on failure of mandate to IHMCL account (*To be circulated separately by IHMCL*)

**4. Process of Raising the Invoice & Penalty Collection**

- a) IHMCL shall calculate the penalty charges on account of non-compliance of SLA and share the invoice/ demand of penalty with Members through mail on 5<sup>th</sup> of every month and hard copy through a courier. (if 5<sup>th</sup> is a holiday the next working day will be considered).
- b) Member will check the invoice and send the confirmation mail to IHMCL within 02 working days from date of invoice received from IHMCL.
- c) Basis the concurrence/objection of Members, IHMCL shall send the details to the sponsor bank to collect the penalty charges from Member on 15<sup>th</sup> of the month. (if 15<sup>th</sup> is holiday, next working day shall be considered).
- d) Basis the penalty details shared by IHMCL, Sponsor Bank shall initiate the batch file in NACH system and send the confirmation to IHMCL within 03 working days for successful and unsuccessful transactions.
- e) Post confirmation received from Sponsor Bank, IHMCL shall represent the failed transactions once again through the sponsor bank through NACH or the Member can make the payment through NEFT or RTGS within 2 working day of failure of mandate.

## 5. Terms & Conditions

- a) Members should sign the NACH mandate and shared the signed copy of mandate with IHMCL.
- b) In case of any change in the account at Members' end, same needs to be communicated to IHMCL and NPCI in advance and separate mandate to be signed & submitted by Members before the next processing cycle.
- c) If any NETC Member is not part of the NACH process, then they have to mandatorily make the payment through NEFT/RTGS as per above details.

## 6. Annexure

- A. Format of Invoice/ Demand of Penalty (To be circulated separately by IHMCL)
  - B. Format of NACH mandate to be sign by Members & NPCI (To be given by IHMCL Sponsor Bank)
-

## Annexure IX: NRP & PRD process

The NETC dispute resolution process has been revised to ensure a structured and transparent mechanism for resolving chargeback-related disputes. The updated dispute lifecycle is applicable to all chargeback cases raised on or after **October 15, 2024**.

The dispute resolution process follows the below mentioned stages:

1. Chargeback
2. Pre-arbitration
3. Arbitration
  - a) NPCI panel for review
  - b) PRD: Panel for resolution of disputes
4. RBI (Appellate Authority)

If an acquirer and issuer fail to reach a resolution at the chargeback stage and opt for arbitration, the case will first be reviewed by the **NPCI Review Panel (NRP)**. If the NRP verdict is disputed, the aggrieved party can escalate the case to the **Panel for Resolution of Disputes (PRD)**. If further escalation is required, the final authority for resolution will be the **Reserve Bank of India (RBI)**, the appellate authority.

### 1. NPCI Review Panel (NRP)

#### Process Flow

- The **NPCI Review Panel (NRP)** will review arbitration cases where the acquirer and issuer fail to reach a resolution.
- The panel will consist of **three officials from NPCI, including the Chairman**.
- The panel will assess all supporting evidence and issue a **verdict** based on the submitted documentation.
- If either party is dissatisfied with the NRP verdict, they may escalate the case to **PRD** within **10 days**.

#### NRP Fees and Charges

- A **processing fee of ₹500 + GST** will be levied on arbitration cases that reach the NRP.
- The **losing party** in the NRP verdict will bear the processing fee.
- Fees will be **debited from the losing party** and **credited to NPCI**.

### 3. Panel for Resolution of Disputes (PRD)

#### Process Flow

- If the **NRP verdict is contested**, the losing party may escalate the dispute to the **PRD** within **10 days**.

- The **PRD panel will consist of five officials**—four from the NETC Steering Committee and one from NPCI as the Chairperson.
- PRD will review the supporting evidence and issue a final verdict.

#### Fees and Charges

- NPCI may decide to implement PRD charges in future however currently no charges shall be levied.
- If the **PRD verdict overturns the NRP decision**, the NRP fee will be refunded to the **winning party** and borne by NPCI.

#### 4. RBI (Appellate Authority)

- If either party remains dissatisfied with the **PRD verdict**, they may escalate the case to the **RBI** as the final appellate authority.
- RBI's decision will be **final and binding**.

Recovery of NRP Processing fees including GST will be done on Monthly basis. Invoice / GST reports will be shared by NPCI on monthly basis with member banks.

#### A. Arbitration lifecycle - Acceptance or Deemed acceptance

Dispute Stage	Raised By	Fund Movement							
		Dispute Amount		NRP Processing Fee (		PRD Fee		Reversal NRP Fee	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
<b>Arbitration</b>									
Arbitration raised	ISS	-	-	-	-	-	-	-	-
Arbitration withdrawn	ISS	-	-	-	-	-	-	-	-
Arbitration Accept / Deemed Accept	ACQ	ACQ	ISS	-	-	-	-	-	-
Arbitration continuation	ACQ	-	-	-	-	-	-	-	-



If the acquirer and issuer were not able to arrive at an amicable resolution for the Chargeback and would like to continue with Arbitration through Arbitration continuation, the case would move to NPCI for NRP Verdict.

**NPCI Review Panel (NRP): On verdict - Acquirer**

Dispute Stage	Raised By	Fund Movement							
		Dispute Amount		NRP Fees		PRD Fees		Reversal NRP Fees	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
NRP Verdict in favour of ACQ	NPCI	-	-	-	-	-	-	-	-
NRP verdict against ACQ	NPCI	ACQ	ISS	ACQ	NPCI	-	-	-	-

**NPCI Review Panel (NRP): On verdict - Issuer**

Dispute Stage	Raised By	Fund Movement							
		Dispute Amount		NRP Fees		PRD Fees		Reversal NRP Fees	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
NRP Verdict in favour of ISS	NPCI	ACQ	ISS	-	-	-	-	-	-
NRP verdict against of ISS	NPCI	-	-	ISS	NPCI	-	-	-	-

The aggrieved party, if not satisfied with the NRP verdict could appeal to PRD for review within 10 days from next day of NRP Verdict.

**Panel for Resolution of Dispute (PRD):**

**Panel for Resolution of Disputes (PRD) raised by ISS Bank - NRP Verdict given in favour of ACQ Bank**

Dispute Stage	Raised By	Fund Movement							
		Dispute Amount		NRP Fees		PRD Fees		Reversal NRP Fees	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
PRD Raise	ISS	-	-	-	-	-	-	-	-
PRD Withdrawn	ISS	-	-	-	-	-	-	-	-
PRD Accept / Deemed Accept	ACQ	ACQ	ISS	-	-	ACQ	NPCI	ACQ	ISS
PRD Continue	ACQ	-	-	-	-	-	-	-	-
PRD Verdict in favour of ACQ	PRD	-	-	-	-	ISS	NPCI	-	-
PRD Verdict in favour of ISS	PRD	ACQ	ISS	-	-	ACQ	NPCI	NPCI	ISS

Dispute Stage	Raised By								
		Dispute Amount		NRP Fees		PRD Fees			
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
PRD Raise	ACQ	-	-	-	-	-	-	-	-
PRD Withdrawn	ACQ	-	-	-	-	-	-	-	-
PRD Accept / Deemed Accept	ISS	ISS	ACQ	-	-	ISS	NPCI	ISS	ACQ
PRD Continue	ISS	-	-	-	-	-	-	-	-
PRD Verdict in favour of ACQ	PRD	ISS	ACQ	-	-	ISS	NPCI	NPCI	ACQ
PRD Verdict in favour of ISS	PRD	-	-	-	-	ACQ	NPCI	-	-

The party raising the PRD has an option to withdraw the PRD within 10 days from the next day of PRD raise. The counter party has an option to accept the PRD raise/continue with the PRD review within 10 days from the PRD raise. If there is no action from the counter party within 10

days, then it will be considered as deemed accepted and PRD decision will be against the counterparty.

### Chargeback Representation and Mandatory Evidence

To ensure transparency and efficiency, specific **documentary evidence** is required for different dispute types. In the absence of clear, legible, and complete documentation, the verdict will be given in favor of the **counterparty bank**.

Sr. No	Reason Code	Dispute Type	Document to be submitted by Issuer	Document to be submitted by Acquirer
1	3001	Service not availed by user	User complaint - e-Mail/ letter/ online portal complaint screenshot or any other digital complaint details if the number of complaints from same user exceeds 5 complaints. .	Clear image of vehicle passing through plaza with legible vehicle registration number along with legible timestamp in “yyyy-mm-dd hh:mm:ss” format.
2	3002	Duplicate transaction done at Toll Plaza	1. RRN of original transaction 2. Reader read Date & Time of original txn, 3. Merchant ID of original TXN in MMT  <i>Format - (RRN, reader read date and time, merchantID)</i>	1. MMT to have details to justify that the debit is not duplicate.
3	3003	Vehicle was in exempted list	Exemption Letter/ Or any other proof - If vehicle was in exempted list. Details (Date & Time) of TAG being added as exempted vehicle.	Proof that tag was not added in exempted list during reader read date and time.
4	3004	Vehicle was in blacklist	Details (Date & Time) of tag being added in blacklist.	Proof of tag in Active state during reader read date and time.
5	3005	Vehicle was in low balance	Details (Date & Time) of tag being added in Low balance.	Proof of tag in Active state during reader read date and time.
6	3006	Toll fare calculation error	1) RC Copy showing Gross weight, number of axles. Details in MMT on overcharging.	1) Plaza toll fare details along with vehicle passing image with legible vehicle registration number, side image with visible axle.  2) Plaza type - Return journey, seating plaza Entry and exit wise toll fares details for closed loop plaza (depending on Issue type)

Sr. No	Reason Code	Dispute Type	Document to be submitted by Issuer	Document to be submitted by Acquirer
7	3008	Signature not validated	NA	NA
8	3009	Wrong Debit Adjustment raised	1) RC Copy or Vahan proof showing gross weight, number of axles, seating capacity. 2) Reasoning to be provided if issuer not able to submit axles/Seating capacity in the proof.	Incorrect evidence from issuers needs to be called out in MMT 1) Plaza toll fare details along with vehicle passing image with legible vehicle registration number. 2) Plaza type - Return journey, seating plaza Entry and Exit wise toll fares details for closed loop plaza (depending on Issue type)
9	3011	Paid by other means	1) Monthly pass receipt 2) Cash Receipt with Plaza ID and VRN	Details in MMT
10	3013	Fraudulent multiple transaction	Details on why the transaction is Fraudulent in MMT 1. RRN of original transaction 2. Reader read Date & Time of original transaction, 3. Merchant ID of original TXN in MMT format - (RRN, RRT, Merchant ID)	MMT to have details on why the transaction is not fraudulent
11	3014	Other Specify	Proof as applicable	Proof as applicable
12	3030	Return Journey benefit not provided to customer	Original RRN in MMT	Evidence of entry & exit of vehicle passed from 1st journey and return journey, toll fare chart with details of return journey charges. Return type at Plaza (No return discount, return discount within 24 hours)
13	3031	Connecting Plaza benefit not provided to customer	Original RRN in MMT	Evidence of entry & exit of vehicle passed from 1st journey and return journey, toll fare chart with details of return journey charges.

Sr. No	Reason Code	Dispute Type	Document to be submitted by Issuer	Document to be submitted by Acquirer
14	3032	Local user discount not provided to customer	Proof of local user	1. Confirmation on why local user concession not provided
15	3033	Transaction presented in delay and wallet went to low balance	Details in MMT	NA

#### ACRONYMS AND ABBREVIATIONS

<i>NPCI</i>	National Payments Corporation of India
<i>NETC</i>	National Electronic Toll Collection
<i>VRN</i>	Vehicle Registration Number
<i>NRP</i>	NPCI review panel
<i>PRD</i>	Panel for dispute resolution